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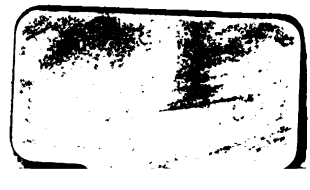

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SAINT BARTHOLOMEW'S HOSPITAL REPORTS.

ARTICLE I.—*On the Morbid Histology of the Spinal Cord.* By W. B. KESTEVEN.

LOOKING back, not a great many years, at the manner in which the morbid anatomy of the nervous centres was prosecuted at the time that I was a student at St. Bartholomew's Hospital, and comparing therewith our present methods of its investigation, I cannot very much wonder that so little was then known of the real nature of the pathological changes attendant upon disease of the brain or spinal cord. Within the memory of this generation the post-mortem examination of the brain was confined to the observation of the number of blood-points seen on its cut surfaces, the presence or absence of effusion or extravasation, the existence of abnormal growths, and, generally, the consistence of the brain-substance. The spinal cord was seldom, if ever, removed for examination.

In cases of the deepest clinical and pathological interest it therefore came to pass that 'nothing was found to account for death,' or to account for the symptoms that had preceded. Hence the impression gained footing that the essential nature of disease of the brain was inscrutable, and its traces undiscoverable. Dr. Hope, a pathologist of no mean note, writes in 1834: 'Lesions of the brain resolve themselves into a very few genera of a simple nature, and, from the homogeneous nature (!) of the cerebro-spinal substance, consist more of differences in size, colour, and situation than in essential character.'

Andral, whose work on pathological anatomy was the text-book of those days, describes only those appearances which

were obvious, and evident to the unaided sight. So lately even as 1855, Wedl could express his regret that he knew no scientific method of examining sections of the brain or cord. We are now, however, no longer restricted to the superficial view of the morbid conditions of the nervous centres. The field which, as Dr. Hope expressed it, stood 'invitingly open,' has been entered and diligently cultivated, and is now yielding fruit with daily increase.

In Germany Stilling, in Holland Schröder van der Kolk, led the way to the successful study of the minute structure of the spinal cord, in health and in disease. It was not, however, until our own countryman, Lockhart Clarke, had made known his method of rendering transparent thin sections of the cord, and had given us his anatomical demonstrations of its constituent normal structures, that it became possible to trace the changes effected therein by disease. So great have been the advances since Clarke's mode of microscopical investigation by transmitted light has been employed, that no pathologist could at the present time be considered to have completed the history of any case of disease of the nervous system which does not include a microscopical examination of the central organs after death. It is scarcely possible to over-estimate the value of Dr. Clarke's investigations; but for them, we might still be groping in the dark, or making guesses at internal and intimate changes from gross outward and visible appearances.

In the following observations, I make no pretension to having submitted an exhaustive essay upon the morbid histology of the spinal cord. Such an attempt would have equally exceeded my limits and my capabilities. I have confined myself to the endeavour to present a general outline of the principal changes to which the spinal cord has been found by pathologists to be obnoxious, more particularly of those lesions which I have myself had opportunities of investigating. With this view I have intentionally passed over the clinical history of these lesions as being beyond the scope of histology 'pure and simple.'*

Normal Histology.

Before entering upon the morbid, it may be well briefly to

* Since my professional position as a general practitioner to a great extent precludes the study of any particular class of disease, I would take this opportunity to thank many friends, holding hospital appointments, for gifts of morbid specimens. In the well-chosen words of Sir James Paget, I must 'thank them collectively, not because I owe them little, but because I cannot name them all, and cannot thank some without appearing ungrateful to the rest.' (Preface to 'Surgical Pathology.')

enumerate the normal, histological, elements of the spinal cord. These we shall consider in the order of—1, Blood-vessels; 2, Nerve-fibres; 3, Nerve-cells; 4, Connective tissue and neuroglia.

1. *Blood-vessels.*

The supply of blood to and from the spinal cord is carried by arteries and veins which lie in the anterior and posterior fissures, and send their branches with the connective tissue, or prolongations of the pia mater, which enter at various parts of the surface of the cord to pass between the component parts of the columns. The arteries entering by the mesial fissures send vessels to the adjacent columns, anterior and posterior. Principal branches pass off right and left at the bottom of the anterior fissure, pierce the longitudinal columns through the grey matter on each side of the central canal, dividing and subdividing *ad infinitum*, forming a mesh of minute capillaries. The veins are most conspicuous in the posterior fissure, where they unite and form a network on the posterior columns.

The existence of lymphatic vessels has been asserted for the brain and spinal cord; but, as will be shown further on, their presence is more than doubtful.

2. *Nerve-fibres and Columns.*

The spinal cord presents an outward aspect with which all are familiar; the internal aspect is also equally well-known, e.g. its division into two lateral halves, by the anterior and posterior median fissures, and the further division of these halves by the lateral fissures. The central grey matter presents in its general outline a well-known resemblance to the letter H. It has, however, considerable modifications of form in the different regions of the vertebral columns. These differences of form soon become familiar to the eye of the anatomist. At the lowest part, the extremity of the conus medullaris consists of grey matter wanting the border of white fibres, which latter gradually increases in extent, encroaching on the grey matter as we advance towards the upper part of the cord. In ascending the cord, the mass of grey matter is separated into two by the mesial fissures, but united by a band of fibres, called the middle commissure. The cornua, or collections of grey matter on each side, have been divided by Lockhart Clarke into

caput and cervix, the limits of which are fully described by him.

The fibres constituting the mass of the longitudinal columns are arranged for the most part longitudinally, but many fibres run at various angles, intermingling with each other. A firm connective tissue binds all together, and divides the bundles of fibres into tracts or regions as it passes among them from the pia mater. The fibres are tubular, or cylindrical, and when stained with carmine show the cut ends of the axis cylinder, or the nerve fibres with surrounding medulla, according to some anatomists. It should be stated that Frommann, in common with Bidder and Schultze, denies the existence of the special sheath around the axis cylinder in the nerve-fibres of the spinal cord. The hole left in thin sections by the removal of nerve-fibres is on this view merely an aperture or ring of the adjacent medulla.

The want of a distinct sheath that is very often seen around the contracted nerve-cells in hardened preparations, is regarded by Frommann as an argument against the presence of a special sheath around the fibres. Any appearances that might seem to warrant the contrary opinion are, he considers, due to small detached portions of the medulla. The cut ends of the fibres are well seen in transparent transverse sections, as are also the spaces from which the fibres or axis cylinders have been removed in manipulation. Transverse nerve-fibres contribute to form the central commissure, which is divided into anterior and posterior portions with reference to the central canal, the latter having a greater proportion of grey matter than the anterior. These are considered, by Brown-Séquard, as relatively ministering to sensitive and motor functions.

Nerve-cells, and Connective.

The grey matter of the spinal cord consists principally of multipolar cells and nerve-fibres combined, together with the connective tissue or neuroglia, and blood-vessels. From the nerve-cells are given off processes, which become tubular nerve-fibres, of varying magnitude, crossing and interlacing inextricably. The cells differ in shape and size, and in the number of processes given off by them. They are round, oval, fusiform, crescentic, triangular, stellate, &c. They have one principal, and from two to eight other processes passing in directions transverse, oblique, and longitudinal. They go to form the white columns, the nerve-roots, and the commissures.

The nerve-cells are, with corpuscles of the connective, imbedded in the connective tissue, the ultimate modification of which is known as neuroglia or nerve-glue, and forms the basis of the tissues of the cord and brain. Around the multipolar cells the neuroglia is often of lighter colour, and in many instances a distinct space is seen, as if post-mortem contraction of the cells, or of the neuroglia, or both, had taken place; probably due to the hardening agencies employed in preparation of the cord.

MEASUREMENT OF THE STRUCTURES OF THE CORD.

Cells in grey matter	Width	$\frac{1}{200}$	to $\frac{1}{2188}$	M.
	Length	$\frac{1}{218}$	" $\frac{1}{500}$	"
Nuclei of cells		$\frac{1}{871}$	" $\frac{1}{2275}$	"
Nerve-fibres of longitudinal columns		$\frac{1}{871}$	" $\frac{1}{5100}$	"
" of roots		$\frac{1}{2900}$	" $\frac{1}{9000}$	"
" of commissures		$\frac{1}{8000}$	" $\frac{1}{30000}$	"
Blood-vessels		$\frac{1}{436}$	" $\frac{1}{20000}$	"

MORBID HISTOLOGY.

The phenomena of structural change of the spinal cord, to be here considered, will be treated in the order in which its normal elements have been enumerated, viz. in the blood-vessels, nerve-fibres and roots, nerve-cells, and in the connective tissue. The general view thus to be obtained of the lesions, to which these tissues are obnoxious, will be of service in pointing out the existence of certain features as being common to all organic diseases of the cord, and to the destructive changes that have been found in tetanus, loco-motor ataxy, various forms of paralysis, &c.; the relation of these several lesions to previous symptoms being discoverable in the special anatomical and physiological connections of the structural elements of the nervous centres, rather than in the pathological characters of the lesions.

1. *Lesions of the Vessels.*

At the outset of an enquiry into the morbid conditions of the cerebro-spinal circulation, we are met by physiological considerations which cannot be overlooked, with reference to certain abnormal vascular conditions, to which attention will be directed.

It was formerly held by teachers of physics—and the doctrine is not even now wholly exploded—that the skull forms an air-tight chamber, and that as the brain-substance is absolutely

incompressible by any force that can reach it from the heart through the carotid and vertebral arteries, therefore the quantity of blood circulating in the brain must always be exactly the same.

Both positions, however, are untenable. Dr. Burrows long ago showed, from his own original observations and experiments, that the quantity of blood contained within the cranium is variable, that the brain substance is compressible, and that moreover a certain amount of compression of the cerebro-spinal substance is essential to the integrity of its functions; undue pressure being guarded against by the presence of the cerebro-spinal fluid in the ventricles and vertebral canal.

These conclusions have been confirmed by Kussmaul and Tenner, and are now generally adopted on the Continent. The latest exponent of scientific medicine in Germany, Niemeyer, expresses this doctrine, almost *totidem verbis* with those of Dr. Burrows twenty-five years ago.

The consideration of pathological anatomy, on which we shall have to dwell, will afford additional confirmation to these views. Changes in the calibre and of the structure of the minute vessels, with alterations in the adjacent brain substance, could not occur if this structure were absolutely incompressible, and the amount of blood-pressure absolutely invariable. Transient hyperæmia will cause no more pressure than will be recovered from by the natural elasticity of the tissues; persistent congestion leads to such distension of the vessels as impairs the normal elasticity of adjacent, and causes permanent dilatation with an altered condition of the brain substance. The researches of Wharton Jones, and of Beale, have shown that the capillaries are mere passive tubes not possessing contractility; therefore they must be the more susceptible of distension and dilatation.

When the spinal cord has been hardened with chromic acid, thin sections may be cut and rendered so entirely transparent as to exhibit the exact relationship of the several elements one towards another. It will be seen therein that the capillary vessels lie normally in absolute contact with the adjacent neuroglia. The investigation of the relation of the outer surface of the vessels to the surrounding brain or cord substance is most satisfactorily made in thin sections hardened by chromic acid and rendered transparent by turpentine. The attempt to trace the relations of these structures with fresh and soft cord, or brain, by the forcible removal of the vessels,

gives rise to such disturbance and rupture of the tissues as, to a certain extent, to destroy the value of any inferences that may thence be drawn.

The tunica adventitia, or surrounding connective tissue, conveys the vasa vasorum of the arteries, capillaries, and veins, and is the seat of the exudation of blood globules and other heterogeneous deposits. When thus dilated, the true significance of these spaces has, I believe, been misapprehended. They have been looked upon by some as normal structures, instead of having been regarded as the abnormal results of the excessive distension of their contained vessels, or of the presence of exudations or cell proliferations.

Professor His, of Berlin, a few years ago announced the discovery of a system of spaces surrounding the arteries and veins of the brain and spinal cord, and quite sharply defined externally. In transverse sections of hardened brain substance, the ring-like space around the vessel, and the lacunæ exhibited in longitudinal sections, were seen by His, and designated by him 'perivascular lymphatic canals,' and described by him as possessing an epithelial lining.

Dr. Bastian adopted these views in his translation of the paper by His, and in an essay on congestion of the brain, describing the supposed vessels and their sheaths. The existence of these vessels has been generally accepted by physiologists and pathologists in this country; it is, however, stated by Eberle that His has abandoned his opinion as to the nature of these spaces, and agrees with him that they possess no proper walls, and cannot be looked upon as in any degree belonging to the lymphatic system. On the other hand, it should be stated that Dr. Golgi, of Pavia, in an unpublished essay, states that he has succeeded in injecting these canals with indigo, and considers them to be part of the lymphatic system! Dr. Rutherford, of King's College, has also kindly informed the writer that he has injected the canals with Prussian blue.

With all due respect, however, for the opinions of distinguished physiologists, it is yet open to doubt whether these spaces should be regarded as normal structures. The channel of communication with the lymphatic system in the neck has not been satisfactorily demonstrated, and it may fairly be a question whether the passage of injections into lacunæ around the vessels affords proof that they are normal structures. These lacunæ are commonly met with in abnormal conditions;

their calibre and their distribution observe no regularity or uniformity; they present the aspect of post-mortem contraction of contained structures, more especially so as they frequently contain blood globules, hæmatin, and cells. A disputed point in physiology is not to be settled by authority; nevertheless it may be allowable to state that these inferences with regard to the nature of the perivascular spaces are supported by the opinion of Dr. Lionel Beale, who in a note to the writer says: 'I cannot but feel pretty sure that the perivascular canals, in the sense in which the term was first employed, exist not. When the vessels are contracted, of course there is a space between them and the brain tissue, which contains serum; and often corpuscles, descended from white blood corpuscles, are met with. These in disease increase, and all sorts of changes result. But that special canals are developed around the vessels, and communicate with the lymphatics—in fact, form part of the lymphatic system—is, in my opinion, a mere fancy.'

An additional argument against the existence of these lymphatic canals is to be found in the necessary conditions of blood supply for the nutrition of the cerebro-spinal substance in which the capillaries ramify. These conditions are expressed to perfection by Sir James Paget in his 'Lectures on Surgical Pathology.' 'The blood-vessels serve alike for the nutrition of the vascular and non-vascular parts, the difference between which parts, in this regard, is really very little. For in both cases the blood-vessels lie outside the textures to which they convey the nutritive fluid; and though in the vascular parts this fluid is carried in streams into their interior, whilst in the non-vascular it flows only on or near the surface, yet in both alike the parts to be nourished have to imbibe the nutritive fluid, and the business of formation is outside the vessels.' In the brain substance the arteries, with their tunica adventitia entering the brain substance with the pia mater, become capillary, and convey the nutritive fluid to the structures through which they are distributed.

Congestion and Inflammation.

Congestion of the cord, as of the brain, although of a serious import during life, may pass away in the act of dying, but intense congestion of the minute vessels of the cord may also remain after death. This was indeed, in one instance, the only pathological condition to be noticed in the brain and

spinal cord of a case of death from hydrophobia. The entire structure presented a pink colour from the injection of blood, but exhibited no other structural change.

Congestion of the cord is a prelude to extravasations of blood. In chronic disease such an occurrence sometimes precedes the fatal result. Clots of blood in the interior, and extravasations on the surface, are met with after death from tetanus, paralysis, and frequently where death has been preceded by convulsions. In the case of a child whose body I recently examined, the whole outer surface of the medulla oblongata was covered with extravasated blood. On the other hand, deficiency of blood supply, or anæmia, is spoken of as a pathological condition. I have not met with an example of this condition in any post-mortem examinations, but it has been shown to have been produced by physiological experiment, such as ligature of the arteries, and by electrical excitation of vaso-motor nerves.

Having in mind the frequency with which one meets with the termination 'itis' in clinical medicine, and the not seldom mention of myelitis, which has, moreover, obtained a place in the authorised 'Nomenclature of Diseases,' with its definition, 'inflammation of the substance of the spinal cord,' I have been surprised that I have so rarely seen examples of this condition. I have met with cases in which the spinal cord, removed soon after death, has been too soft for efficient microscopical examination. In some few of these cases the post-mortem changes have been such as warranted the diagnosis 'acute myelitis,' but in many others the pathological appearances have belonged to more chronic forms of disease, whilst in many the softening has been owing to incipient putrefaction. The ordinary products of acute inflammation are not met with in the substance of the spinal cord; its existence has been a clinical inference, not a pathological demonstration. The examples of inflammation that I have had opportunities of examining have been cases of meningitis; the signs and results of inflammatory action having stopped short with the membranes and their connective prolongations.

The effects of inflammation upon the substance of the cord have been secondary, such as have produced degeneration of the nerve-fibres and other structures, following upon long-standing disordered nutrition.

Fatty degeneration of the vessels of the cord as of the brain is a condition discoverable by microscopical examination, and was first pointed out by Sir James Paget as the condition of

the minute vessels of more or less limited tracts of the brain, most frequently giving rise to apoplectic extravasations. The production of fat in the vessels of the cord is shown by the use of glycerine with the thinnest section, better than by the ordinary method of rendering the substance transparent with turpentine, which, having a solvent property, clears the preparation. The appearances presented by the fatty degeneration of the vessels of the nervous centres have been so exactly given by Sir James Paget, that a reference to his invaluable storehouse of pathological facts will more than suffice for the want of a present description. That this morbid change in the vessels precedes the chronic degenerations of the nerve-fibres is to be inferred from the known laws of nutrition. The nerve-fibres that are thus insufficiently supplied with blood 'in its right state' and proper quantity, necessarily become atrophied or starved, they gradually disappear, and are replaced by altered tissues such as the granular degeneration of Clarke, or disseminated or diffused sclerosis. Attendant on the degeneration of some of the fibres is the breaking-up of other fibres and minute vessels, with alterations of the connective tissue and corpuscles of the neuroglia. This latter condition of the structure of the cord is to be seen in several forms of chronic disease; gaps or openings of various forms being found, most commonly in the central parts, around or near to the points of entrance of the arteries, and filled with the débris of the tissues.

Lesions of the Nerve-fibres and Connective Tissue.

Practically it is not possible in pathological histology to separate the nerve-fibres from the connective tissue or neuroglia by which they are bound together. Any morbid condition affecting the one will, to a greater or less degree, involve the other.

It may, however, be convenient here to consider a condition of the fibres which is not unfrequently misunderstood. In destructive disease of various kinds in the grey matter, a broken-up or disintegrated state of the nerve-fibres is very often met with. The broken fibres present oval, rounded, elongated, discoid appearances, giving them the aspect of cells; and as these sometimes also exhibit a concentric arrangement, they are occasionally mistaken for corpora amylacea. When the latter occur also among the débris of fibres, it is not always

easy to distinguish them. Wedl was at a loss to explain these bodies, and was of opinion that they might be colloid bodies. These fragments of débris are met with in various forms of destructive degeneration. They consist of varicose nerve-fibres, broken medullary sheaths, and fragments of non-medullated nerve-fibres, intermingled with granular matter or exudations, oil globules, and the remains of blood-vessels.

The broken-up structures of the cord are generally to be met with in the various forms of degeneration that are discoverable after death from chronic and destructive disease of the cord, in tetanus, locomotor ataxy, progressive muscular and other paralytic conditions.

A well-marked atrophy of the connective tissue is to be seen in the wide radiating fissures in transverse sections of diseased cords. These are clearly the result of the disappearance of the connective tissue, which, in the healthy state, holds together the bundles of nerve-fibres constituting the longitudinal or white columns. The débris of fibres are frequently to be seen in the radiating fissures that are thus caused. The loss of connective tissue and breaking-up of nerve structure is the essential basis of the various degenerations that have been observed in the cord, viz. the grey or sclerosis, the yellow or granular, and the amyloid.

Grey Degeneration, or Sclerosis.

This is very extensively met with in severe forms of paralysis, and in locomotor ataxy. In the latter disease it occurs in a diffused form, invading large tracts of the white fibres, involving the posterior columns of the spinal cord, and extending into the grey matter. Thus the cornua may appear atrophied, narrowed, elongated, or otherwise deformed, the multipolar cells and their processes going to form nerve-roots, also being sometimes implicated in the atrophic changes.

On making a section of a cord affected with this form of disease, a marked difference is presented between the aspect of the posterior and the other longitudinal columns, and an evident difference, in vertical sections especially, from what is ordinarily presented by these columns. The posterior columns to which, in locomotor ataxy, the alteration is almost confined, are lighter in colour, and almost translucent. The change consists in disintegration of the nerve tissue, with degeneration of the connective tissue. A large number of corpora amylacea

are frequently met with in the morbid tissue, and oil globules of various size in the blood vessels.

A disseminated or miliary form of sclerosis is frequently met with, and has been observed in very different forms of disease, e.g. in chronic mania, Duchenne's paralysis, hydrorachis interna, tetanus, lukæmia, and idiocy. Miliary sclerosis has been described by Drs. Batty, Tuke, and Rutherford, and by the writer, and has been noticed also by many continental pathologists. An elaborate treatise on this pathological change has been published by Dr. Meredith Clymer. Dr. Tuke has pointed out that the spots of degeneration pass through several stages, the tissue that disappears leaving holes that are filled with the morbid deposit. The clinical significance of this change of structure is not very evident, as it is met with under such various pathological states.

The morbid conditions found in the cord and brain from a case of pseudo-muscular hypertrophy were thus described by the writer. 'The spots of granular degeneration vary in size and in number in different parts. They are irregularly scattered in the white substance adjoining the grey matter of the convolutions; very few are noticeable in the grey matter. In the corpus striatum and thalamus opticus they are very sparse, and in the medulla oblongata and spinal cord they are also few and far between. The form of these spots is generally circular, some few are lobulated. They are evidently spaces caused by loss of cerebral tissue replaced by the morbid matter. Examined by a half-inch or quarter-inch object-glass, this matter is seen to be amorphous, colourless, and semi-opaque; it resists the carmine dye, so that it is readily distinguished from the surrounding structure. In transparent and coloured sections the borders of the apertures are for the most part defined, their edges being formed by minute vessels and tubules which become tinged by carmine. The borders, however, are frequently much less distinctly defined, the brain substance insensibly gliding into the granular matter. These spots of degeneration vary in size; the larger having a diameter of from $\frac{1}{50}$ to $\frac{1}{200}$ inch, while the smaller transparent spots range from $\frac{1}{250}$ to $\frac{1}{1500}$ inch in diameter. Throughout the brain and cord the cells of the grey matter retained their normal characters.

I found also this form of sclerosis both in the spinal cord and in the brain of a case of congenital idiocy, from a youth who lived to be twenty-one years of age, the subject of severe convulsions during nearly the whole of that period. No other

morbid condition was observable except the dilatation of the vessels that always attends long-standing cerebro-spinal disorders.

The co-existence, which I have seen, of miliary sclerosis in both brain and spinal cord, in some cases of tetanus, has doubtless a bearing upon the pathology of that disease, the cause of which we are perhaps too much disposed to look for exclusively in the spinal cord.

The starting-point of sclerosis, as well as of other forms of degeneration, is not easily discoverable, but it exists most probably in that condition of the nuclei or bioplasts, which in other structures has been shown by Sir James Paget to be the origin of their degeneration; the remote causes being in many instances some structural disease of the brain by which portions thereof are rendered inactive, as in atrophied distal parts of nerves whose trunks have been divided, or fatty degeneration of the vessels already spoken of in treating of morbid conditions of the blood-vessels.

The miliary sclerosis presents itself as spots scattered in various parts of the cord, in both the grey and the white columns, but most numerously in the medullary or white columns. In size the spots vary from the $\frac{1}{50}$ to the $\frac{1}{500}$ of an inch; they have a semi-transparent, amorphous, and colourless aspect. They are bordered and sometimes traversed by the broken nerve-fibres and fragments of blood-vessels or connective tissue, and are often seen to contain minute oil globules. They resemble amyloid bodies, and are sometimes clustered together in similar groups; ordinarily they are detached. The irregularly circular spots of miliary sclerosis are not easily distinguished from amyloid bodies or cellulose degeneration, with which it may in the first instance be associated, minute deposits of cellulose being ultimately converted into spots of degeneration. The reactions of iodine and sulphuric acid are to some extent masked by the presence of the chromic acid in which the cord has been hardened. They may, however, be distinguished by the application of polarised light. Examined with the polariscope or by the use of a spotted lens, these spots of degeneration show their granular composition. They are unaffected by the variations of coloured light; whereas the amyloid degeneration and its attendant disintegration is affected by the rotation of the prism, and does not present the granular appearance exhibited by spots of sclerosis.

Amyloid degeneration is often met with in conjunction with

other chronic disease of the nervous centres, presenting itself in minute spots in the medullary portions of the brain, more frequently than in the grey matter. It has already been remarked that the globular and ring-like forms assumed by broken nerve-tubes and disintegrated cylinders, sometimes presents a great similarity to amyloid bodies.

Granular disintegration of the cord was first pointed out in cases of tetanus by Lockhart Clarke. It consists in the total disappearance of the normal tissues, in circumscribed irregularly shaped patches, forming apertures which are seen to be filled with an amorphous granular deposit. Under high powers of the microscope, these molecular patches are seen to be sometimes traversed by the remains of vessels, while their margins are marked by the débris of the adjacent structures. This deposit is occasionally seen as a more or less diffused exudation into the fissures caused by atrophy of the connective tissue holding together the bundles of longitudinal fibres.

Granular disintegration is a condition that is found in other diseases besides tetanus, e.g. in various forms of paralysis. In sections coloured with carmine, this form of degeneration takes the dye, which is not the case in miliary sclerosis, or in amyloid degeneration.

A condition of the connective tissue opposed to that disintegration, degeneration, and atrophy that have been described, was seen by the writer in a portion of a spinal cord from a case of 'acute myelitis' so-called. The patient had been under the care of Dr. Moxon at Guy's Hospital. Paralysis of all the limbs had come on suddenly, had been attended with considerable elevation of temperature, and had terminated fatally within fourteen days. In the cervical enlargement there was found disintegration of nerve-fibres, with a redundancy of threads of connective tissue presenting enlargement of its corpuscles. I have also, in a case of leukæmia, observed a similar excess of connective tissue of the medulla oblongata.

Lesions of the Nerve-cells.

Atrophy.

The only alterations of the nerve-cells that have come under my notice are excessive pigmentation and atrophy.

Dr. Lockhart Clarke gave me an opportunity of examining specimens of this form of lesion, from a case of wasting palsy. In this instance the cells of the anterior grey substance

and of the posterior vesicular columns were more or less atrophied, and wholly or partially filled with pigment granules. The reduction in size was so considerable that many of these cells were very little larger than the corpuscles of the connective tissue.

Dr. Bastian pointed to atrophy of the cells as having been met with in a case of muscular atrophy. The morbid appearance, however, is not by any means very common, or frequently met with. It would seem to have been somewhat familiar to the French pathologists. Thus we find Dr. Duchenne dividing this change in the size of the cells into acute and chronic, and again into three different forms, according as the symptoms are local or general. The change, he adds, is frequently met with in the wasting of infantile paralysis, in the progressive muscular atrophy of adults, and in labio-glosso-laryngeal paralysis.

Changes in the Central Canal.

Hydrorachis interna, or excess of the ordinary cerebro-spinal fluid, in the central canal, is occasionally met with among other changes following upon chronic disease. Two examples of this condition have come under the writer's notice. In one instance the enlargement of the canal was not very great, but its pathological bearings were of considerable interest. Dr. Moxon, of Guy's, examining the body of a boy who had died of a disease, not specially involving the nervous centres, observed a band of old lymph deposit of about a hand's breadth encircling the inner surface of the costal pleura. This appearance led to the examination of the spinal cord, in which the cervical and upper dorsal region of the central canal was found to have been much dilated. On further microscopical examination of a portion of this cord, we found its white and grey matter thickly sprinkled with disseminated sclerosis; affording presumption that the hydrorachis had been of long standing, and was probably the result of previous sclerosis.

The second example of hydrorachis that I have had an opportunity of examining I owe to the kindness of Dr. Greenhow. In a case of progressive muscular atrophy the enlargement of the central canal, in the dorsal region, was found to be so great that the cavity measured from $\frac{1}{25}$ to $\frac{1}{18}$ of an inch in diameter. This case presented, moreover, a very unusual change in the form of diverticula of the canal. In two positions, one laterally and the other anteriorly to the

central canal, thin sections presented the appearance of one or two supplementary or additional canals lined with the normal columnar epithelium. On continuing the sections this appearance was found to be owing to the fact that the pressure of the contained fluid had occasioned the structure of the cord to give way at certain points, so that the fluid carrying before it the epithelial lining had formed these diverticula. These, extending also longitudinally in the axis of the cord, as well as transversely, when their upper or lower ends were cut through gave them the semblance of being supplementary canals. Dr. Lockhart Clarke has occasionally noticed, and has figured the occurrence of two such secondary canals, each lined in the ordinary way. (Philos. Trans. pt. I. 1859, plate xxii. fig. 55.)

In its normal or healthy state, the central canal is often filled up with the nuclear débris of the epithelium. This condition is still more marked in many forms of chronic disease. After the process of hardening with chromic acid, this débris often appears on the cut surface of the cord in making sections, as an opaque creamy fluid oozing from the canal and radiating fissures.

The connective tissue of the light-coloured space around the central canal is studded with corpuscles, and the fine processes of the epithelial cells. According to some continental observers, this part of the cord is the seat of the special change to be found in tetanus, and this consists in the excessive proliferation of these corpuscles of the connective tissue. I cannot say that I have found this to be the case, as no relation of any kind has been obvious to me between the existence and variation in the numbers of these, and any form of disease.

Preparation of the Cord.

It may be useful to add to the preceding remarks the methods that have been employed by the writer in the preparation of the spinal cord for microscopical examination. Having made trial of other plans that have been proposed, Dr. Lockhart Clarke's method has been adopted, as it is undoubtedly the best for making the transparent or turpentine preparations. The cord should be removed as speedily as possible after death, and, being deprived of its dura mater, should be divided into portions about an inch in length. It should then be placed in a solution of chromic acid to the strength of one part to three hundred of water. Potassium, or ammonium bichromates, have been

recommended, and are used frequently, especially by continental pathologists, but are not so certain in their hardening power as chromic acid.

In about three weeks' time the solution should be changed for fresh, of the same strength.

By the end of six or eight weeks the cord will usually be found to be hard enough to allow of cutting thin sections. If not so, more time should be allowed. The addition of more acid should be made very cautiously, if at all, as the cord is easily rendered too brittle for cutting into thin slices.

If the cord have previously been preserved in spirit, it should be placed in water for three or four hours, in order to absorb the alcohol, which otherwise spoils the subsequent appearance by causing crystallisation of the acid.

The section should be made with a sharp razor (this cannot be too sharp) on which a few drops of spirits of wine have been poured. The section will in this way be easily floated off on the surface of some clean water in a saucer. After the spirit has thus been washed off, the section should be transferred to a solution of carmine of a deep rose colour, in which it should remain a minute or two, or longer. This solution is made by rubbing down carmine with strong liq. ammoniæ and a small quantity of water. A few drops of this solution will give the water a sufficiently deep tint. The excess of carmine should then be washed off in clean water, and the section placed in strong alcohol for another minute or two. If the surplus carmine be not thoroughly washed off previously to putting the section in alcohol, it will subsequently be deposited in granules, and the preparation thereby obscured. The section, being removed from the spirit, is held in the air for a minute to allow most of the spirit to evaporate from it; before, however, it is absolutely dry, it should be floated upon some spirits of turpentine in a watch-glass or other shallow flat vessel. In a few seconds the section will be seen to become transparent and uniformly clear. It should in the next place be laid upon a drop of Canada balsam, or Damma varnish, on a warm slide; a thin cover, previously slightly warmed, being then carefully laid over it, will complete the work, which may altogether be done in less than ten minutes—if expedition be an object of importance, which, however, may be doubted. The rendering the section transparent is of the greatest value possible in the investigation of the cerebro-spinal structure. It is, however, often of great advantage, in the examination of morbid specimens, to supplement this method by the use of glycerine, more particularly

Beale's carmine and glycerine solution. For the examination of the fresh cord glycerine is indispensable. A thin section of cord hardened by chromic acid will, if Dr. Beale's instructions be followed, become sufficiently translucent to show its structure well; the cells of the grey matter are often brought into strong relief by the employment of glycerine and carmine.

In order to avoid overloading my pages with references, but at the same time that I may indicate to my readers the sources of information which they may with advantage consult for themselves, I have appended the following

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Article II.—*On Amputation for Traumatic Gangrene.*

By William S. Savory, F.R.S.

Ever since the principle of amputating in traumatic gangrene, without waiting for any possible line of demarcation, was enunciated by Baron Larrey, it has been generally accepted by surgeons. While, however, the practice has, in many cases, been so successful as apparently to justify its adoption, surgeons have been but too familiar with others in which an operation has been rapidly followed by a recurrence of gangrene in the stump, and thus has proved worse than useless. But the principle itself, as set forth by the authority of the great French surgeon, has not escaped criticism.

Guthrie, for example, in his Treatise on Gun-shot Wounds, 1827, has some remarks on the views and doctrines of Larrey which are worth attention, and, indeed, require it, in order to be understood, for they cannot be extolled on the score of lucidity. He criticises, by the way, with an acuteness one would hardly have expected—considering how thoroughly he was imbued with the then current notion of a vital principle—the Baron's theory of the cause of the spreading of traumatic gangrene—the 'metastasis' of a 'gangrenous principle.' Guthrie writes: 'He considers this humid or traumatic gangrene as a deleterious principle, which is capable of spreading by infection or contagion, and is consequently irresistible; whilst he supposes, on the contrary, that the gangrene which arises from cold, when it reaches the sound parts, becomes a stimulant, and induces the vessels to act in order to separate the dead from the living parts: an hypothesis which is entirely imaginary, supported by no known principles, and invented apparently to account for a difference which he could not otherwise explain' (pp. 124, 125). One is tempted, in passing, to ask here why Guthrie himself does not apply this very simple reasoning to the larger question of life?

With regard to the practice founded on this theory, he insists upon the distinction to be drawn between constitutional and local gangrene; but he says: 'By the terms constitutional, humid, and dry gangrene, I do not alone mean gangrene which has originated, as it may be termed, idiopathically; but in which the constitution or system at large is or has become affected, either primarily or secondarily' (p. 116). In this sentence, and throughout all he says, there appears to be no distinction drawn between an infirm state of health previous to any injury, which strongly predisposes to gangrene, and the damaging effect of local mischief upon the system, whereby extension of mortification is encouraged. In the first case the injury may be so trivial that, call the gangrene by what name you will, it is pathologically idiopathic.

And Mr. Vincent, in his 'Observations on Surgical Practice, 1847,' goes further; for, after giving a sketch of the way in which a surgeon should treat a case of severe injury, he writes (p. 106), 'I may safely say that for many years that I have followed up these principles, I have never had a case of traumatic gangrene arising from severe injuries that has not stopped;' and again, 'I am convinced that by adopting this course of watching the expressions which the constitution shows during the first three or four days of the first stage of

very serious injuries, and by throwing in brandy when the indications demand it, that there can be no occasion to amputate on account of traumatic gangrene.'

It seems to me that much of the disappointment which has followed this practice has resulted from not recognising the distinction which should be drawn between different cases of traumatic gangrene. All cases in which gangrene of a limb has followed upon a local injury have been included under the term which, in expressing the exciting cause, is supposed to indicate the pathology of the affection. But is this so?

We all know that the same injury which in one person will provoke rapidly extending gangrene, will in another be followed almost uninterruptedly by a healthy process of repair. It is clear that in every such case something further than the nature and extent of the injury has to be considered, and that the term traumatic takes cognisance of only one factor in the result. The constitution, or the state of health and strength of the subject of the injury, is far more important; and I venture to think that it is because its share in the advent of gangrene has not been sufficiently analysed, that too many operations in these cases have failed.

The case still stands as Larrey originally put it: 'There is a sensible difference between traumatic gangrene and spontaneous gangrene; or, if you will, between humid gangrene from an external cause and dry gangrene, which ordinarily acknowledges an internal cause.'*

Traumatic gangrene depends on two causes: one local—the injury inflicted; one general—the constitution of the patient; and whether the removal of the part will succeed or fail is determined by the relative share of these two causes in the occurrence of gangrene.

Some injuries are so severe that in the healthiest and strongest persons gangrene of the injured part must ensue. Indeed, as every one knows, a part may be killed outright. There the cause is wholly local, and the case is one most favourable for amputation.

Some injuries, so trivial, are, in certain persons whose constitutions are 'broken down,' followed by gangrene; the local mischief, although strictly the exciting cause, taking, in a pathological sense, but a very small share in the result—none at all, perhaps, after the mischief has started. In such cases the cause of the mischief is almost entirely constitutional, and

* Mémoires de Chirurgie Militaire et Campagnes de D. J. Larrey, 1812, t. iii. p. 148.

these are the very worst for any sort of operation, which indeed is now out of the question.

This class of cases seems to me to be illustrated by certain forms of senile gangrene. In the more ordinary forms, as every one knows, the dead part simply becomes dry and black, and withers; the mischief often starts without any appreciable local cause, and the arterial system is found to be deeply degenerate. But then there are other cases not so common as these, but of which two or three instances have been lately under my care in the hospital, in which the gangrene, although beginning in the same part in a similar way, but in persons of less advanced age, has yet been not so dry, or black, or defined, or shrunken, but more moist and livid, and, with the parts adjacent, somewhat swollen: in a word, more like moist gangrene from injury. And in these cases evidence of some previous injury, although very slight, has been usually forthcoming; while there is still stronger evidence of impaired health and degenerate tissue. Such cases seem to stand between typical cases of senile gangrene and unequivocal cases of traumatic gangrene. The degeneration has not advanced far enough for the tissues at the extremity to perish directly and, as it were, spontaneously; but yet the defect of structure is so grave that an injury too trivial to provoke even passing mischief in a healthy person here leads very rapidly, though indirectly, to death of the part.

But between these extremes lie the great majority of such cases; and in proportion as the surgeon can fairly estimate the relative share of the factors in the result, or, in other words, determine whether the mischief is due more to local or constitutional causes, will an operation in his hands prove successful.

In weighing, in such cases, the momentous question of amputation, I have, by way of clearing the ground for a decision, put the matter to myself thus:—

Here is a case of compound fracture of the leg, followed by gangrene. If any operation is to be performed, it must be amputation of the thigh, say in its middle third. Now, is amputation of the thigh an injury much less severe than that which has already determined the gangrene? I say much less severe, because allowance must be made for the effect of the past injury. The patient must be so shaken by this, that, so far as his powers are concerned, he must be less able to meet a demand upon them now than he was at first.

Of course such a question as this is, of all questions in surgery, amongst the most difficult to answer. It can be, at the

best, but answered vaguely. Still, upon the evidence we can gather, and upon our accuracy in weighing it, will the event depend.

Hence the almost uniform mortality after operations for traumatic gangrene in London hospitals, and the greater chances of success, notwithstanding very formidable obstacles to it, in military practice. A large proportion of the subjects of injury followed by this affection are persons whose blood and systems have, for years previous, been saturated with adulterated alcohol, and whose solids and fluids are so damaged and unstable—one may say rotten—that they oftentimes in parts perish or decompose under the influence of a disturbing cause which escapes detection.

But there is a further question and a most important one. What would have happened in cases which recover after amputation if they had been left alone? We must not doubt that in some of these the progress of the gangrene would have been arrested, and a line of demarcation have been formed. Perhaps in many of these cases it may be reasonably imagined that where an operation has succeeded, recovery would have ensued without such an amputation, and with less sacrifice of limb. But then there is this consideration: how far gangrene, when once established, may promote its own progress by absorption, perhaps, of putrid matters and local inoculation, or general poisoning. The practice of amputation in such cases may be justified upon the view originally set forth by Larrey, that the existence of a gangrene in a part is the cause of its extension to adjacent ones, and therefore that the patient will be likely to succumb without any attempt to form a line of demarcation. But over and above this, amputation may diminish the risk of the worst of all evils—poisoning of the blood.

While, therefore, one cannot go the length of refusing to amputate in all cases of traumatic gangrene, we must be very careful not to be, in any degree, misled by any such expression as that 'it is an established rule in surgery that we are to amputate at once in traumatic gangrene, without waiting for any line of demarcation.' I venture to say that the rule should be that we ought not to operate at all; but exceptions to this, as to other rules, occur, and then the patient's life hangs on the decision of the surgeon.

Article III.—*Meningitis and Otitis Interna.*—By Samuel J. Gee, M.D. Lond.

THE connection which exists between necrosis of the pars petrosa and purulent encephalitis (abscess of the brain) has long been known; but the connection between otitis interna (unattended by any disease of the bone) and purulent meningitis (infiltration of the pia mater and subarachnoid space with lymph more or less puriform) has been, for the most part, overlooked. I say for the most part, inasmuch as the fatal delirium or convulsions, which physicians from time to time have observed to accompany otitis interna, must have been due to concurrent meningitis. For example, R. A. Vogel, in his Lectures, speaks thus: 'Sæpe in otite interno deliria et animi deliquia et convulsiones excitantur, et sub istis pathematibus otites ille intra septem dies et jam primo necare potest.' For almost all cases of purulent meningitis can be arranged in two classes, the phrenitic and the convulsive; the phrenitic being that form in which lesions of the intellect predominate, namely delirium which ends in coma: the convulsive form likewise ends in coma.

The relationship between the otitis and the meningitis, so far as concerns the time of onset of their several symptoms, is this. Sometimes the symptoms of otitis distinctly precede those of meningitis. Sometimes the meningitis sets in without any precedent symptoms of otitis: and when this is the case, sometimes the symptoms of otitis show themselves in the course of the meningitis; sometimes the otitis is latent and undiscoverable throughout. In this way cases may be arranged in three classes, each of which I now proceed to illustrate.

I.—*Symptoms of Otitis precede those of Meningitis.*

About cases of this kind there ought not to be any difficulty, so soon as we become familiar with the truth that meningitis is at least as frequent a consequence of otitis as is abscess of the brain. Whether this truth be generally known or not I cannot say: this I can say, that the books of reference in common use (for instance, Rilliet and Barthez' work) do not allude to the coincidence in the remotest manner. For my part, I own that I knew not this pathological sequence until I was taught it by a case which I saw with Dr. Mackintosh, of Brompton. A child, three years old, the subject of otorrhœa,

was suddenly attacked by convulsions and high fever. Coma supervened, and death on the fourth day. At the post-mortem examination we discovered purulent meningitis, but no disease of the pars petrosa. In short, the occurrence of delirium or convulsions and coma, attended by high fever, in a patient known to be suffering from otitis interna, almost certainly indicates the onset of purulent meningitis.

II.—*Symptoms of Meningitis precede those of Otitis.*

I foresee that it is open to anybody to deny that the meningitis, in these cases, is really secondary to the otitis. It may be said that the occurrence is accidental, or that both meningitis and otitis are equally secondary to some antecedent disease. I will not stay to discuss this matter: my own opinion is strong that the otitis causes the meningitis; but I will proceed to narrate a case, and let the reader judge for himself.

A servant girl, named Elizabeth Lack, 17 years old, was admitted into Elizabeth Ward on July 3, 1868. In the absence of Dr. Harris, the patient was under my care. She had been ill for nine or ten weeks; menstruation had ceased for that period, and she had pains in her limbs. About a month before admission she began to suffer from headache. Three weeks before admission vomiting began, and it had continued to be a marked symptom; she vomited two or three times a day. For two weeks she had been delirious at night.

July 4.—She is very pale, chlorotic-looking. Temperature 102°. Pulse 136, quite regular. No otorrhœa. No strabismus; pupils rather large, equal. No vomiting since admission. Abdomen rather retracted.

July 6.—She has wandered much every night since admission. Very apathetic; not unconscious. Skin dry, temperature 101·5°. Pulse 124, quite regular, very soft. Breathing regular. Slight internal strabismus of right eye; pupils equal. Tongue dry and brown; no vomiting; abdomen markedly retracted; bowels rather loose, stools very offensive. Her face, which was pale, has flushed considerably during the examination; there is also a very well marked tache cérébrale. Some leucorrhœal discharge, and œdema of legs.

July 7.—She looks much as yesterday; rather less apathetic. Less delirium last night. Temperature 103°. Pulse 144, quite regular. Slight strabismus remains; pupils large and equal. No vomiting: bowels open once since last note; stool

copious, loose, green; abdomen more full. Slight colour in cheeks; tache cérébrale.

July 8.—She lies moaning, passing her hand over her forehead, but says that her head does not ache much. She can hardly be got to answer questions. Temperature 101°. Pulse 140, full, regular. Pupils very small, equal. Tache cérébrale.

July 9.—Rather more delirious last night. Temperature 101·5°. Pulse 140, quite regular. No vomiting; bowels open once since last note. Pupils equal, contracted as yesterday. The left pupil was dilated by atropia, and the fundus of the eye-ball examined by Mr. Vernon, who gives the following report: 'Optic nerve indistinct, and covered with a whitish cloud partially hiding the vessels; optic neuritis due to congestion of the vessels along the optic nerves or optic tracts.' Well-marked tache cérébrale.

July 10.—More apathetic. Groans, passing her hand over her forehead. She can see. Pulse 136, regular. Abdomen retracted; bowels open once. Right pupil contracted, left dilated by atropia.

July 11.—She says she has bad frontal headache. Temperature 100°. Pulse 140, quite regular. No vomiting since day of admission; bowels open regularly once daily; abdomen still retracted. Pupil still very small. Tache cérébrale. Lung and heart sounds natural.

July 13.—Very much as before; pulse quite regular.

July 14.—She does not look so thick and heavy as she did; she is much quieter at night. Temperature 100·7°. Pulse 144, quite regular. Right pupil still small. Abdomen still retracted.

July 16.—Temp. 101·4°. Pulse 144, regular.

July 22.—She is much the same, except that she is obviously weaker. She still complains of headache, especially about the coronal suture. No strabismus; pupils equal. Temperature 100·25°. Pulse 132, regular; character of pulse has been peculiar for a few days; it can be felt to rise gradually towards its acme, and then rather suddenly to fall; the sphygmograph shows that this is really the case, and that the gradual ascent is dicrotous. This was an unusually distinct example of the kind of pulse named by Rufus Ephesianus *δορκαδίζων* (pulsus caprizans), and deemed by Landois to be a variety of the pulsus dicrotus, in which the pulses follow so hard upon each other that the second small rise of one pulse and the first great rise of the next pulse are continuous, and not separated by the fall which is natural to the healthy pulse. She occasionally vomits;

bowels act regularly. Tache cérébrale cannot be obtained as formerly. This morning fœtid otorrhœa on the left side appeared for the first time; discharge rather abundant.

July 25.—She is very much weaker. Temperature 98°. Pulse 136, regular, same ascending dicrotism as before. Has vomited frequently the last few days; bowels open; belly retracted. Otorrhœa continues.

July 29.—She died.

The post-mortem examination was made by Dr. Church twenty-eight hours after death. Body emaciated. Offensive discharge from the left ear, and discharge from the vagina. Scalp and calvaria natural, the latter thin. On opening the sac of the arachnoid, a little discoloured serum escaped, and both layers had on them shreds of lymph, here and there bloodstained; more of these shreds were situated on the left than on the right side. Considerable ecchymosis over the right parietal, and less on the left temporal lobe. Convolutions not at all flattened: on the surface of the left frontal lobe, situated beneath the membranes, was a small yellowish white speck, about the size of a small pea. This, when cut through, was soft, and looked to the naked eye like pus; a similar little speck was on the right posterior lobe, and two smaller ones on the right frontal lobe. At the base of the brain a considerable quantity of slightly turbid serum stained with blood was found. About the optic commissure the membranes were slightly thickened and opaque, no undue adherence of the sides of the Sylvian fissures, but the pia mater in them was extensively ecchymosed. On section the brain was congested, and the grey matter had a pinkish tinge. The fluid in the ventricles was similar to that at the base of the brain. The fornix and septum lucidum were firm. The velum interpositum thickened. Over the upper and anterior surface of the pars petrosa the dura mater was non-adherent, and the surface of the bone was discoloured, but smooth and not necrosed.

In this case the meningitis ran a very slow course, lasting as it did about eight weeks. The otorrhœa appeared not more than a week before death. Now if the meningitis had been a little less prolonged, probably no otorrhœa at all would have occurred, and the case would have belonged to the third class instead of the second. But cases of the third class, in which there are no symptoms of otitis, usually run a very swift course, and prove quickly fatal: the meningitis kills the patient before the otitis has time to show itself. Of this I will give an example.

III.—*Symptoms of Otitis latent throughout.*

Thomas Lemon, 24 years old, admitted into John Ward under my care.

On the evening of September 7, 1871, he had been about his usual work of winding clocks up, and he seemed quite well. Next morning his brother could hardly rouse him; he complained of pain in the back of his head, and of nausea; however, he got up and dressed, but seemed strange; so that he went to lie down at one o'clock in the afternoon, and shortly afterwards fell into his present state, on account of which he was brought to the hospital the same day, September 8.

September 8. A well-nourished man; lies somnolent, with eyes shut and mouth half open. Undergoes general convulsions from time to time; throws his limbs about, moans, keeps his eyes closed. He resists opening of his eyes strongly. Pupils large, right larger than left: divergent squint. No discharge from either ear. Temperature 103°. Pulse 120, regular. Strong pulsation of carotids: feet cold: well marked tache cérébrale. Has vomited some green stuff: passes evacuations under him: belly not retracted. No physical signs of disease in the chest. No rigidity of back, or of any other muscles.

September 9. Passed a very restless delirious night. No convulsions lately. 9 a.m. T. 101·4°, P. 136, regular. 6 p.m. T. 104·6°, P. 144, regular.

September 10. Vomited last night: bowels freely open, stools passed unconsciously. Otherwise much as at first. I made an attempt to examine his ears with a speculum, but it was impossible to do so on account of his restlessness. 9 a.m. T. 103°; P. 144, regular. 6 p.m. T. 103°; P. 160, regular.

September 11: A very bad restless night. Bowels not open: abdomen distended. 9 a.m. T. 105·5°; P. 146, regular. 6 p.m. T. 107·2°; P. 200. He died the same evening, deeply comatose.

Post-mortem examination by Dr. Wickham Legg.

Calvaria rather thin: no injury apparent.

On reflecting dura mater, the meninges are seen to be opaque in many places, containing a turbid fluid: no tubercles are to be seen on the convex surface. The corpus callosum is not raised, nor are the convolutions much flattened. On opening the ventricles, about half an ounce of a turbid fluid escaped.

The base of the brain is covered with exudation, which extends into the Sylvian fissures, and backwards to the cerebellum and over it. But no tubercles are apparent.

The central parts of the brain are much softened: the exudation appears penetrating into the choroid fold: no tubercles of the choroid plexuses.

On removing the petrous part of the temporal bone on the right side, the tympanum is seen to be perforated, and pus to be coming out of it.

There is no pus apparently in the sheath of the seventh nerve, but abundance in the sheaths of the third and fourth.

All other viscera natural.

This was a very typical case of purulent meningitis. It derives much of its interest from the fact that I suspected the existence of otitis all along, and yet I was not able to determine that point, inasmuch as there was no otorrhœa during life, and the delirious distress of the patient was so great that I could not deem it right to use that amount of restraint which would have been necessary for a satisfactory speculum examination of the membrana tympani.

The spinal canal was not opened in this case; but there can be no doubt that, laborious though the process be, it should be undertaken if possible in every post-mortem examination of a patient dead from meningitis. When we bear in mind the continuity which exists between the subarachnoid space of the brain and spinal cord, it is easy to understand the spreading of purulent meningitis downwards. The cerebral meningitis becomes cerebro-spinal. This is nothing dissimilar to what we see in meningeal apoplexy, when, in consequence of the rupture of a small aneurism upon the circle of Willis, the pia mater is filled with blood from the optic commissure to the cauda equina. I will now illustrate cerebro-spinal meningitis, secondary to otitis, by a case.

Benjamin Watts, aged five months: was admitted on June 28, 1871, into Hope Ward, under the care of Dr. Black.

Post-mortem examination.

Slight rickets.

Over anterior part of anterior fontanelle is a swelling, the remains of an abscess which was opened on June 30. Turning the skin back, it was found that the membrane of the fontanelle was perforated by a hole, which was large enough to admit the tip of a finger. This hole passes through the dura mater. When the skull is squeezed, pus flows out of the hole.

The dura mater everywhere naturally adherent to the calvaria: no pus external to the dura mater.

The arachnoid cavity, in the anterior half, coated with a layer of pus. At a spot opposite to the hole in the dura mater, the pia mater and visceral arachnoid have given way, and disintegrated brain exudes to a small amount.

General purulent infiltration of pia mater and subarachnoid space: thick pus very abundant at base of the brain.

Ventricles of brain distended with several ounces of puriform liquid; and at the bottom a sediment of thicker pus.

All brain structure very soft, especially around the ventricles.

No communication between ventricles and the softened part of brain forming the floor of the abscess above described.

All the sinuses examined; nothing but recent clots in them.

Spinal cord: whole subarachnoid space full of pus.

The pars petrosa looked quite natural after the dura mater had been separated from it. The temporal bones were taken out and sawn through, so as to open the tympanum on both sides. On the left side, the tympanum was found highly inflamed, full of pus, and the inner surface covered with brilliant red granulations. The vestibule seemed natural. The membrana tympani was not destroyed, but very red.

All the other viscera natural.

The perforation of the fontanelle was secondary to the meningitis, and similar to the external discharge of an empyema.

I have said that the spinal membranes should be examined in every case of cerebral meningitis. Because this has not been done, many descriptions of purulent meningitis lose much of their value. Rilliet and Barthez ground their chapter on simple (cerebral) meningitis upon thirty cases; and yet the same writers begin the chapter on spinal meningitis by confessing that they have only one (non-tubercular) case of their own to rely upon, and even this was not put beyond the possibility of doubt by a post-mortem examination. It is incredible that, out of thirty cases of cerebral meningitis, not one should have been cerebro-spinal. I myself have seen six cases of simple cerebro-spinal meningitis in children, whereof four were examined post-mortem, without reckoning the case I have just narrated.

The fact that purulent cerebro-spinal meningitis may be due to otitis interna is very important. The question at once rises whether all cases of that sporadic and apparently spontaneous

cerebro-spinal meningitis which we see in England may not be dependent upon otitis. I regret that my own post-mortem examinations do not (except in the single instance referred to) throw any light upon this subject, for I did not think of examining the tympanic cavities. Three cases were rather chronic, and yet no otorrhœa occurred. But, on the other hand, the case of Elizabeth Lack shows that the appearance of otorrhœa may be delayed seven weeks from the onset of the meningitis.

I wish that I had some facts to bring forward relative to the way in which the otitis leads to the meningitis. I can only refer to the post-mortem examination of the body of Thomas Lemon, in which Dr. Legg did not find any pus in the sheath of the seventh nerve.

Article IV.—*The Urinary Phosphates in Ague.* By Samuel J. Gee, M.D. Lond.

VOLUMETRIC analysis of the urine has fallen very much into disuse of late years. So far as lies within the power of the methods now at our disposal, the subject may be said to have been worked out; yet the gain to pathology has been little, and to medicine less. Most of the volumetric processes are untrustworthy; some important constituents of the urine cannot be estimated at all; the very principle of urinary analysis may be attacked upon the ground that 'you might as well analyse the drainings of a laboratory, and think to find out thereby the kind of experiments which have been going on above;' but the chemical operations of the body are very limited in number. Some years ago, while I was medical registrar to the Hospital for Sick Children, I worked hard at analysis of the urine; however, the only fact I gathered which was interesting and (so far as I know) new, was that which I now proceed to lay before the reader.

Two boys had dwelt, from Christmas 1861 to Christmas 1863, in the Isle of Grain, an aguish spot at the mouth of the Thames. After leaving this place they came to London, and in May 1864 they both began to suffer from ague. On June 28, 1864, they were admitted into the hospital under the care of Dr. West.

Case I.

Walter Burgess, aged 10 years. Weight on admission, 47½ pounds, or 21·5 kilograms. Spleen seven inches long.

Case II.

Albert Burgess, aged 11 years. Weight on admission, 56½ pounds, or 25·6 kilograms. Spleen six inches long.

In both boys the skin had that pale bistre hue characteristic of ague cachexia. The type of the ague was tertian at first, but it had become quotidian a few days before the children were admitted. They had not undergone any treatment, except that the elder boy had taken three small ineffectual doses of quinine.

While the observations were being made, the patients were kept in bed. The diet, in twenty-four hours, consisted of about 1,500–2,000 cubic centimetres of milk, and 500–750 c. c. of beef-tea for each boy; the elder boy took less food than the younger. No pharmaceutic treatment was employed until July 6, when the ague was cut short by two ten-grain doses of quinine, given immediately before the paroxysm.

Before, during, and after the paroxysms, the urine was collected and examined every hour. Neubauer's uranium process was used for the estimation of the phosphoric acid; Liebig's mercurial method for the urea and chloride of sodium. Albumen was at no time present in the urine. The water was measured by cubic centimetres, and the solids by grammes.

Standard of Health.—In order to gain some sort of standard for comparison, the urine was examined on two days when all signs of ague-fits had disappeared, and when the thermometer in the armpit did not rise above 98·6° (37° C.), the patients being still in bed.

I. Walter B. July 8. Diet precisely the same as during the febrile period, that is, milk and beef-tea, at rate of 115 c. c. per hour. Urine examined hourly during day.

	Mean hourly quantity			
	Water	Urea	Chl. sd.	Phos. ac.
5.30 A.M. to 8 A.M. .	30	·682	·352	·050
8 A.M. to 1 P.M. .	27	·684	·237	·067
1 P.M. to 6 P.M. .	69	1·415	·529	·161
6 P.M. to 9 P.M. .	54	1·369	·393	·093
9 P.M. to 6 A.M. .	92	1·242	·552	.074
Whole 24½ hours .	64	1·128	·461	·089*

July 11.—Diet unrestricted.

Whole 24 hours .	51	1·051	·308	·092
Mean of 2 days .	57	1·089	·384	·091

II. Albert B. July 8. Diet same as during febrile period: 98 c. c. the hour.

	Mean hourly quantity			
	Water	Urea	Chl. sd.	Phos. ac.
7 A.M. to 8 A.M. .	42	·823	·235	·075
8 A.M. to 1 P.M. .	30	·909	·187	·077
1 P.M. to 6 P.M. .	36	1·242	·347	·109
6 P.M. to 9 P.M. .	40	1·160	·232	·070
9 P.M. to 6 A.M. .	50	·891	·341	·068
Whole 23 hours .	42	1·003	·268	·080†

July 11.—Diet unrestricted.

Whole 24 hours .	43	1·040	·325	
Mean of 2 days .	43	1·021	·296	

* Smallest actual quantity in one hour = ·047 gram, from 7 to 8 A.M.
† Smallest actual quantity in one hour = ·0598 gram, from 8 to 9 A.M.

Urine during paroxysm.

My chief intent is to speak of the phosphoric acid; however, inasmuch as I made frequent estimations of the water, urea, and chloride of sodium contained in the urine of these boys, I will first of all briefly allude to these latter constituents. I will not do more than give a summary of the experiments, for to print all the details would fill several pages with figures.

I.—The Water.

The variations in the quantity of urinary water secreted during the paroxysm occurred in three stages, which did not altogether correspond with either the thermometrical stages (effervescence, acme, defervescence) or the clinical stages (cold, hot, sweating) of an ague fit.

Stage 1 occurred immediately before the rise of the temperature, or coincided with the earlier part of the rise. Duration, an hour or a little more. Quantity of urine increased to two, three, or even nearly four times the standard amount.

Stage 2 coincided with the later part or the whole of the rise, with the acme, and with the earlier part or even nearly the whole of the fall of the temperature. Duration, from four to eight hours. Quantity of urine equal to the standard amount, or, if anything, somewhat lessened. It occasionally happened that the urine of particular hours was little more than a third of the normal.

Stage 3 coincided with the end of defervescence, and was followed by or encroached upon the apyrexia. Duration, from one to five hours. Quantity of urine increased to two or three times the standard amount; individual hours sometimes secreted nearly six times the normal quantity. This stage concurred with a sweating state of the skin, as if the conditions of secretion from the sudoriparous and urinary glands were at this time the same.

For the sake of illustration, I will give the actual figures of one day. (Walter B., June 28–29.)

6 P.M. to 6 A.M.	67 c. c. per hour	Apyrexia.
6 A.M. to 7 A.M.	205 „ „	Temp. rose from 98·75° (37·1° C.) to 100·8° (38·2° C.)
7 A.M. to 1 P.M.	57 „ „	Rose to 104·8° (40·4° C.) at 9.30 A.M., then slowly fell to 103° (39·5° C.)
1 P.M. to 6 P.M.	175 „ „	Fell to 98·8° (37·1° C.); sweating freely.

II.—The Urea.

The quantity of urea excreted rose and fell with the quantity of water, but in no certain ratio. The amount of urea contained in a given bulk of water was greatest in the second stage, and least in the third, as the following table will show:—

Walter B.	Milligrammes of Urea in 10 c. c. of Water				
	June 29	June 30	July 1	July 2	July 3
Stage 1 . .	12	14	9	18	27
Stage 2 . .	17	18	20	27	30
Stage 3 . .	9	4	10	12	11

The absolute quantity of urea during the second stage was at or below the standard; during the first and third stages above it. This may be illustrated by the observations of the same day, which I have referred to under the head of Water. (Walter B., June 28–29.)

Estimated normal . . .	1·089	grammes of Urea per hour
Apyrexia, 6 P.M. to 6 A.M. . .	·753	„ „
Stage 1, 6 A.M. to 7 A.M. . .	2·562	„ „
Stage 2, 7 A.M. to 1 P.M. . .	·994	„ „
Stage 3, 1 P.M. to 6 P.M. . .	1·665	„ „

The actual hourly quantity of urea excreted during the first stage was invariably much greater than any other actual hourly quantity of the paroxysm, being sometimes nearly three times the estimated standard amount. This might have been inferred from the fact that the ratio of urea to water was high, whilst the absolute quantity of water was great during that period.

III.—The Chloride of Sodium

oscillated with the water and urea, but did not increase proportionately in the third stage. The hourly amount during the first stage was very much above the normal.

IV.—The Phosphoric Acid.

I have shown that there was a close connection between the water, urea, and chloride of sodium in the variations which they underwent. But the phosphoric acid followed a type of its own in its variations as to quantity at different periods of the paroxysm. At or soon after the first rise of temperature, the quantity of phosphoric acid began to fall below the standard of the apyretic period. This fall continued throughout the effervescence, and reached its lowest point an hour or two after the acme. Then the quantity of phosphoric acid began to increase, so that, at the completion of defervescence, it was nearly twice or thrice the normal. The hourly fall and rise were singularly progressive, and, as before said, independent of the quantity of water.

Walter B. Hourly phosphoric acid estimated at ·091 gram, normal.

Date	Hours	Temperature	Phosphoric acid: grams, per hour
July 1 . .	11 P.M. to 5 A.M. .	Apyrexia . . .	·078
	5 A.M. to 6 A.M. .	Rose to 100·4° . .	·090
	6 A.M. to 7 A.M. .	,, 102·2° . .	·056
	7 A.M. to 8 A.M. .	,, 104·6° . .	·027
	8 A.M. to 9 A.M. .	Fell to 104·4° . .	?
	9 A.M. to 10 A.M. .	Rose to 105·2° . .	·012
	10 A.M. to 11 A.M. .	Fell to 103·4° . .	·004
	11 A.M. to 12 A.M. .	,, 102·4° . .	·013
	12 A.M. to 1 P.M. .	,, 101·0° . .	·042
	1 P.M. to 2 P.M. .	,, 99·8° . .	·107
	2 P.M. to 3 P.M. .	,, 99·5° . .	·240
July 3 . .	10 P.M. to 5 A.M. .	Apyrexia . . .	·093
	5 A.M. to 6 A.M. .	,, . . .	·149
	6 A.M. to 7 A.M. .	Rose to 100° . .	·069
	7 A.M. to 8 A.M. .	,, 102·6° . .	·046
	8 A.M. to 9 A.M. .	,, 104·4° . .	·011
	9 A.M. to 10 A.M. .	Fell to 103·6° . .	·006
	10 A.M. to 11 A.M. .	,, 102·6° . .	·006
	11 A.M. to 12 A.M. .	,, 101·4° . .	·015
	12 A.M. to 1 P.M. .	,, 99·6° . .	·060
	1 P.M. to 2 P.M. .	Rose to 99·8° . .	·192
	2 P.M. to 3 P.M. .	Fell to 97·6° . .	·196

Albert B. Hourly phosphoric acid estimated at ·080 gram, normal.

Date	Hours	Temperature	Phosphoric acid: grams, per hour
July 1 . .	8 A.M. to 12 A.M.	Rose to 99·4° . .	·076
	12 A.M. to 1 P.M.	Fell to 99·2° . .	·166
	1 P.M. to 2 P.M.	Rose to 99·4° . .	·195
	2 P.M. to 3.30 P.M.	„ 101·4° . .	?
	3.30 P.M. to 4.30 P.M.	„ 104·5° . .	·099
	4.30 P.M. to 6 P.M.	Fell to 104·2° . .	·018
	6 P.M. to 7 P.M.	„ 103·8° . .	·013
	7 P.M. to 8 P.M.	„ 103·6° . .	·000
	8 P.M. to 9 P.M.	„ 101·2° . .	·024
	9 P.M. to 10 P.M.	„ 100·0° . .	·067
	10 P.M. to 11 P.M.	„ 99·0° . .	·090?
July 3 . .	10 P.M. to 10 A.M.	Apyrexia . . .	·077
	10 A.M. to 12 A.M.	Rose to 99·8° . .	·080
	12 A.M. to 1 P.M.	„ 101·5° . .	·064
	1 P.M. to 2 P.M.	„ 104·8° . .	·102
	2 P.M. to 3 P.M.	„ 105·2° . .	·040
	3 P.M. to 4 P.M.	Fell to 104·2° . .	·030
	4 P.M. to 5 P.M.	„ 103·8° . .	·015
	5 P.M. to 6 P.M.	„ 102·5° . .	·052
	6 P.M. to 7 P.M.	„ 100·6° . .	·072
	7 P.M. to 9.15 P.M.	„ 97·2° . .	.175
July 5 . .	4 A.M. to 5 A.M.	Apyrexia . . .	·176
	5 A.M. to 6 A.M.	„ . . .	·093
	6 A.M. to 7 A.M.	„ . . .	·084
	7 A.M. to 8 A.M.	„ . . .	·150
	8 A.M. to 9 A.M.	„ . . .	·087
	9 A.M. to 10 A.M.	„ . . .	·062
	10 A.M. to 11 A.M.	Rose to 99·2° . .	·094
	11 A.M. to 12 A.M.	„ 105·0° . .	.066
	12 A.M. to 1 P.M.	Fell to 104·8° . .	·028
	1 P.M. to 2 P.M.	„ 102·0° . .	·018
	2 P.M. to 3 P.M.	Rose to 102·4° . .	·010
	3 P.M. to 4 P.M.	Fell to 100·8° . .	·197
	4 P.M. to 5 P.M.	„ 100·0° . .	·051
	5 P.M. to 6 P.M.	„ 99·5° . .	·146
	6 P.M. to 7 P.M.	„ 99·4° . .	.126
	7 P.M. to 8 P.M.	„ 98·8° . .	·116
	8 P.M. to 9 P.M.	Apyrexia . . .	·131

These observations are not selected; they are all that I made: and the constancy with which the quantity of phosphoric acid diminishes (even to complete absence) soon after the acme, is very remarkable.

In a marked case of hectic fever (a boy of 9 years old) the urine of twenty-four hours gave the following results, which seem to show that there is no great resemblance in this respect between the quotidian fever of hectic and ague.

	Temperature	Water		Phosphoric Acid	
		Total	Per hour	Total	Per hour
8 to 10 A.M. .	At 9 A.M. = 98° .	35	17·5	·082	·041
10 to 12 A.M. .	Rose to 101° .	44·5	22·25	·134	·067
12 to 2 P.M. .	„ 102·2° .	78	39	·167	·083
2 to 4 P.M. .	Fell to 100·4° .	86	43	·164	·082
4 to 6 P.M.* .	Kept at 100·4° .	69	34·5	·064	·032
6 to 8 P.M. .	Fell to 100° .	60	30	·072	·036
8 to 10 P.M. .	Rose to 100·2° .	53	26·5	·085	·042
10 P.M. to 8 A.M.*	At 8 A.M. 98° .	180	18	·488	·049

ARTICLE V. — *Surgical Cases.* By ROBT. JALLAND.

CASE I.—*Ligature of Common Femoral.*

IN September 1863 I was summoned to a boy who had been wounded by his companion while playing with a scythe.

The boy, a fine lad, 11 years old, had been struck with the scythe in the upper part of the thigh, and had lost a great quantity of blood, when a medical man, who was fortunately passing at the time, applied a bandage and arrested the hæmorrhage. Mr. Tickler was with the boy when I arrived.

On examination I found a wound about an inch and a half long in the upper third of the front of the left thigh. It was a clean cut wound, and bled profusely when the bandage was slackened. I could pass my finger two inches or more into the wound, which penetrated downwards and outwards. The profunda was undoubtedly wounded.

Hoping that I might be able to secure the ends of the severed vessel, I enlarged the wound and endeavoured to expose the source of the hæmorrhage; but this I found to be impracticable from the depth at which the severance had occurred. I then made an incision over the common femoral, which was readily exposed, and avoiding a small nerve, probably a branch of the anterior crural, I applied a ligature round the vessel just above the origin of the external pudic branches, and closed the wound. There was no further hæmorrhage. The limb, which

* Sweating profusely.

became slightly colder than the other, was then wrapped in a fleece of wool, and an opiate administered which secured the patient a good night. The following day I found him cheerful and comfortable; the collateral circulation had become well established, and the wounded limb was as warm as the sound one.

He continued to make a good recovery without the occurrence of any serious symptom. The ligature did not come away until the 28th day.

Ligature of the common femoral has not been practised frequently from the supposed risk of secondary hæmorrhage, arising from the branches which spring from the artery in this portion of its course, and also from the probability of gangrene, from the occlusion of almost the entire channel of circulation in the limb. Erichsen condemns the operation entirely, and says it has only succeeded in 3 cases out of 12. Porta gives 8 out of 16. Yet it has been successfully performed by the two Porters in 5 cases,* and must be admitted to be no more fatal than the published cases of ligature of the external iliac (the alternative operation) of which 33 died out of a total of 118.

The preceding may prove interesting, as it adds one more to the short list of successful cases of this operation, which may be said to be yet under trial.

CASE II.—*Operation for Inguinal Hernia, old adhesions to Sac.*

In December 1870 I was called to a widow 52 years of age. I found her suffering greatly from pain in the abdomen, and learned that she had an irreducible femoral hernia on the right side of three years' standing.

The tumour was the size of a small egg, not tender or enlarged, and bore handling without pain. Pulse 80, soft; tongue furred; slight nausea; no vomiting. Thinking it to be a case of simple obstructed hernia, I ordered an aperient enema to be administered, terebinthinate fomentations to be applied to the abdomen, and gave her 30 minims of liquor opii. The next day she was somewhat better, had slept, and was in much less pain. The enema had brought away some fæces. Suffers from frequent nausea; has vomited once bile and mucus. The enema was ordered to be repeated, and the sedative to be given every six hours.

* Dublin Quarterly Journal of Medical Science, November 1860.

Third day. Decidedly worse. Is constantly sick, and the vomit fæculent. Pain very severe about umbilicus; the tumour tender and painful; great depression. Pulse 110, small and weak.

The hernia was now undoubtedly strangulated, and, in consultation with my partner Mr. A. E. Boulton, it was decided to make a short trial of the taxis under chloroform, and that failing, to proceed to operate. The taxis being quite ineffectual, I made the ordinary incision over the tumour; and finding, when I had reached the sac and enlarged the inguinal ring, that I could not return the hernia, I carefully opened the sac, which was everywhere attached by old adhesions to the neck of the inguinal pouch. The bowel was dark-coloured and inflamed, and all around the neck of the sac was so firmly adherent that it could not in any degree be returned through it. I then very carefully broke down the adhesions with the finger-nail and director until I could return the bowel into the abdomen, a proceeding which gave me considerable difficulty and trouble, after which the wound was closed and a bandage and compress applied. The patient was then put to bed, and a grain of opium directed to be given every four hours.

From this time there was no return of the sickness or pain, and the patient made a good and uninterrupted recovery.

It was a noteworthy feature in this case that no action of the bowels occurred until three weeks after the operation. This was partly due to the opium, which was continued for a day or two for the purpose of keeping the bowels at rest, but I apprehend it was mainly due to the paralysed condition of the bowel in the strangulated portion, which required rest and time to restore its healthy tone.

At the end of the second week castor oil was given, and repeated without effect, but as there were no urgent symptoms requiring it, no further aperient was given. Eventually, on the twenty-second day, copious natural and healthy evacuations were passed.

I may add that for a short time she wore a truss, but she soon dispensed with its use, as she found there was no disposition to a return of the hernia, which appears to be radically cured.

CASE III.—*Tracheotomy, for the removal of a marble from the Windpipe.*

August 15, 1869. About seven o'clock in the evening I was called to a boy 14 years of age, who was said to have

swallowed a marble. He was breathing naturally, and at the time of my visit he made no complaint; but he told me that about half an hour previously, when playing with a marble in his mouth, he felt it slip down his throat, and was immediately attacked with suffocation, which he described as 'stopping his breath.'.

From the total absence of any urgent symptoms, I concluded that the marble, having got within the rima glottidis, had been expelled in the act of coughing, and passed down the œsophagus, so I simply ordered an emetic and left him.

About half-past eleven I was called up to him in haste, and found him almost asphyxiated, gasping for breath, and unable to speak. In a few minutes the paroxysm subsided, and he then told me that after being in bed a short time, he was suddenly roused by most urgent suffocation, which had continued more or less until my arrival. He further said he could feel the marble in his neck, and pointed to the lower part, immediately behind the upper extremity of the sternum. In a few minutes I was able to satisfy myself of its presence in the trachea, and after securing the assistance of my partner, Mr. A. E. Boulton, I proceeded to open the trachea for its removal.

The operation was difficult by reason of the frequently recurring paroxysms of dyspnœa, which caused the lad to struggle violently, and the imperfect light which a tallow candle afforded; but eventually the trachea was reached, and an opening made through several of the rings. At this time respiration had ceased altogether, but by turning the lad face downwards, and slapping his back well, respiration was restored. Still the marble remained fixed. After various changes of position had been tried, as head downwards, &c., I ran home for a long pair of thin-bladed forceps, thinking I could, perhaps, extract the marble with them; but on my return, a few minutes afterwards, I was gratified to find that during a fit of coughing the lad had expelled the marble, which fell upon the floor. He was now breathing easily, and expressed himself as quite relieved. I at once closed the wound, and put the boy to bed. No untoward symptom showed itself, and within a week he was at his work.

The marble was a common stone one, and measured about four-tenths of an inch in diameter.

ARTICLE VI.—*Clinical Observations upon certain Skin Diseases.* Part I. By DYCE DUCKWORTH, M.D. Edin.

IN this communication I propose to record some of the more interesting cases which have come under my care in the Skin Department of the Hospital during the past two years.

They will be found under the following heads:—

1. Favoid crusts in a case of Tinea circinata.
2. How a case of Tinea circinata was probably caught.
3. Keloid of Alibert.
4. Chronic Pemphigus (Pemphigus diutinus).
5. Lichen planus.
6. Lichen ruber.
7. Congenital Xeroderma (Ichthyosis simplex).
8. Brown (True) Ichthyosis.
9. Morphœa (Keloid of Addison, Scleriasis).
10. Acne rosacea.
11. Tubercular Syphilide (Syphilitic Lupus).
12. Note on the Treatment of Psoriasis by simple inunction with Olive Oil.

The first case which I shall describe was somewhat peculiar, inasmuch as two or three masses, much resembling those of true Favus, appeared on the surface of a patch which I believe to have been Tinea circinata, or ringworm of the body.

Favoid Crusts in a case of Tinea circinata.

A. B., male, æt. 15, came with several figurate patches of eruption over the sternum. There were likewise scattered masses about the nipples and over the anterior and upper part of the trunk. The surface of the patches was of reddish-yellow colour, with well-defined margins, somewhat deeper in hue. Some partly scaly and scabby masses could be picked off, and smaller branny particles were removed easily by scraping with a knife.

There were also visible three small, primrose-yellow, cupped masses, which stood out more prominently from the rest of the affected surface over the sternum. They were easily picked off, and left a raw base beneath.

The disease was not of very long duration, and there was

no tinea of the scalp apparent, no affection of the nails, and there was no history of contagion.

I prescribed a placebo internally, and no local treatment. The scales and small yellow masses were severally submitted to microscopic examination. I found abundant sporules in the former, with moniliform mycelium and numerous epithelium scales. In the latter—the cupped masses—the sporules were densely packed, and there was more mycelium. The spores were of the same size and character in both specimens, the mycelium being better formed in the cups. I regarded the latter as mere aggregations of the Trichophyton.

In a week the lad returned, with an increase of the disease, and one or two fresh cup-like masses had appeared.

I prescribed the following ointment, to be applied twice a day, for two or three days, to the affected patches. Hydrargyri perchloridi gr. x., Adipis puri ℥j; misce bene.

In another week the disease had disappeared. It may occur to readers of this case that I have described an example of true favus of the body. My reasons for not thinking so are, first, that the affection resembled in no particular favus of the body, further than that there were present two or three very minute favoid masses upon one of the affected surfaces; secondly, sporules were found, of precisely similar character, on all parts of the diseased areæ; thirdly, there was no favus of the scalp, and there was no mousy odour about the patches; lastly, favus of the body is a rare affection. In Edinburgh, where this disease is not uncommon upon the scalp, it is rare to meet with it upon the body (I myself only met with two cases during a residence of over four years there*); and in Germany, where favus of the scalp is common, it is seldom seen upon other parts. It is right, perhaps, to state that I sent a fragment of one of the small yellow masses to my friend Dr. McCall Anderson, of Glasgow, and requested his opinion upon the nature of the fungus it contained. I told him no particulars of the case. He replied that he believed the fungus to be the Achorion Schönleinii, but, naturally, would not bind himself to a decided expression of opinion.

True favus is very rarely met with in London. In the last three years, in the Skin Clinique, out of about 3,000 patients, only two cases of the disease have appeared. One of these was on the person of a German boy, whose scalp was affected.

* Professor Sanders has recently informed me that favus is not so common in Edinburgh as was formerly the case.

He had not been very long resident in London, and had imported the disease.

How a case of Tinea circinata was probably caught.

A boy, æt. 7 years, was brought with clusters of patches of this affection around the neck. The head was apparently free from the disease, likewise the rest of the body. There was no history of contagion procurable. The mother, however, volunteered the following statement:—The boy had, 'a week or two previously,' picked up a comforter in the street, and forthwith adopted this article of apparel. The eruption appeared subsequently, and may, not improbably, have been caused by contact with sporules contained in the woollen comforter. The latter was discarded on the appearance of the eruption. Numerous sporules were found amongst the epithelium scraped from the patches.

Keloid of Alibert.

Two cases of this affection have come under my observation. Both occurred in men of middle age, and in both the disease was situate, as so often happens, over the sternal region of the thorax. The first patient was under Mr. Callender's care for some time, and had been the subject of keloid for ten years. In the second instance, the growth was carefully observed to proceed from the cicatrix of a blistered surface. The patient, who is the bath-man of the hospital, suffered twice from rheumatic fever, and on both occasions, had pericarditis and was blistered on the præcordia. In the course of nine months after his last attack lines of pink keloid growth commenced to form in the scar left by the second blister, and they grew somewhat rapidly. This is the only case in which I have myself seen what is indistinguishable from the true Keloid of Alibert arise over the sternum from cicatrix-tissue.*

The patient is a short, thick-set, black-haired, and ruddy man. At the present time, about two years since the commencement of the growth, there are two portions of keloid lying across the mid-sternal region, and they appear to be enlarging very slowly. The patient experiences occasionally the usual uncomfortable and stinging sensations in these growths.

Mr. Callender's patient, T. B., æt. 36, was formerly a sailor,

* I have discussed this matter, and with especial reference to Mr. Jonathan Hutchinson's views upon the subject, in a communication on 'True Keloid of Alibert,' which will be found in the 'Transactions of the Clinical Society of London,' vol. iii. p. 121. 1870.

but for nine years past has been a still-man. Has always enjoyed good health, with the exception of attacks of ague and rheumatism. He first discovered the keloid growths ten years ago; they were then very small, but of the same shape as at present. Never suffered any uneasiness in them till two years ago, and especially during last summer. First experienced itching sensations, then shooting pains occurred. Friction aggravates these. There is no history of a cicatrix upon the sternal region in this case, and there has never been a blister applied in this situation. Relief was afforded by a gutta percha shield, which Mr. Callender suggested, and this was moulded comfortably to the front of the chest.

Chronic Pemphigus (Pemphigus diutinus).

Two or more cases of this most obstinate disorder have lately been in the Hospital. In no instance has the patient received more than temporary relief. In one, the case of a woman, after many months of treatment in a ward, the patient left almost free from bullæ; they returned, however. Mr. Coote had charge of the case, and various methods of treatment were employed.

H. M., æt. 30, had suffered for four months from the disease before admission, and she was in hospital for fourteen months. Her catamenia were absent most of the time. It was noticeable that the parts of the body which were most exposed to the air were least affected by the disorder. A prolonged trial was given in this case to arsenic, and it was found to be of no avail in checking the formation of bullæ. Some relief was afforded locally by painting each new formation at its onset with flexible collodion, but the best results ensued from the employment of creasote baths. Sulphur baths were likewise ordered. Some bullæ appeared on the scalp latterly; the face was always free, and there was only one upon one of the hands. After leaving the ward, this woman attended for a short time as an out-patient. The disorder was less severe than it had been. Some large bullæ came out beneath the mammæ, and were desiccating when I last saw the case.

I have lately heard about this woman, and she is still subject to this distressing and obstinate malady.

T. S., a cook, æt. 66, a strong-looking, ruddy-faced man, with brown hair becoming grey, and arcus senilis well marked, came in July 1871 with bullæ upon the right leg and arm. He stated that he had lost weight during the last two or three years—three

stones, he believed—and that the disorder commenced, four months previously, along the inner side of the right foot. It was supposed at first to be an attack of erysipelas. Bullæ appeared next upon the dorsum of the foot and on the leg, and subsequently upon other parts of the body. There have always been more upon the right leg and arm than in other localities, and the stress of the affection has fallen upon the right lower extremity below the knee. No bullæ have ever appeared on the face, but the right ear has been sometimes affected.

More than forty years ago this man had venereal sores, a bubo, and, at the same period, a sore throat. He had mercury given for these disorders. There is no history, and there are no appearances of any other syphilitic concomitants. Has had a left inguinal hernia for twenty, and an umbilical hernia for sixteen, years. Was never a hard drinker. The urine sometimes deposits lithates. Has chronic bronchitis. The patient complains most of aching in the right leg after standing long. He has observed that he has sweated less during the last year than formerly, although he has been as much exposed to high temperature in kitchens.

The treatment in this case has consisted of zinc ointment, applications of nitrate of silver and sulphate of copper locally, and of bran baths. Collodion has been tried also. Arsenic has proved of no avail, though persisted in for a long time and in increasing doses. Quinine has not been of service. On one occasion, April 1872, a large bulla formed on the buccal mucous membrane, near the orifice of Steno's duct. It had evidently ruptured soon after its formation, and when I saw it on the second day, the appearance was that of a dark purplish base overlaid by shaggy white membranous fragments. There was a general exacerbation of the disease at the same time, fresh bullæ having appeared on different parts of the body.

Hebra mentions the occurrence of bullæ in the mouth and pharynx, likewise Neumann. Mastication and deglutition may thus become difficult and painful.

May 17. Right arm badly affected.

May 31. Enormous bullæ on right leg.

June 14. In same condition. Has less pain now on standing on right leg. To have a creasote bath twice a week, to use collodion as required, and take quinine.

July 12. Somewhat relieved. Bullæ chiefly on left leg.

Lichen planus.

I have seen two well-marked cases of this affection, and I

made an erroneous diagnosis in one instance, which turned out to be syphilitic.

G. L., æt. 57, a rent collector, came complaining of an eruption which had appeared upon both abdominal flanks, extending to the groins and buttocks, and, in a less degree, to the axillary regions. There was also abundant eruption along the vertebral grooves, and extending outwards. No eruption upon the extremities. Five weeks previously there had been itching about the groins, and about the same time the rash was observed. That upon the back has appeared more recently. His previous health had always been good. He was a short, brown-haired (turning grey), spare, but fairly well-nourished man. The eruption was found to consist of scattered flattened papules, distinctly raised, of a tawny pink colour, like that of cut ham; and in many instances these papules coalesced in greater or less numbers, so as to form small and scattered patches of eruption.

These discrete and clustered patches were glossy, and reflected light, and had a polished appearance. This eruption reminded me of that of lichen ruber in an early stage. The patient complained of itching to a considerable degree.

During the first week, while in attendance, the eruption increased in amount. It occurred to the man that his complaint might have been caused by his having taken a full draught of beer while overheated after playing cricket. At all events, the onset of the irritation and the eruption was *post hoc*. He was once a grocer's assistant, and had to leave that employment owing to attacks of eczema on the hands (grocers' itch).

Alkaline baths were ordered, also the nitro-muriatic acid draught, with tincture of nux vomica.

In a fortnight there was no improvement. A study of the patches showed that they were in the same condition as before. There were seen in abundance fine hairs emerging from the affected follicles, and there was a slightly marked umbilicated appearance in each papule.

Later on, slight pigmentation was seen about the oldest patches, and some desquamation also occurred upon them. There was, further, an increased tendency to coalescence of the smaller patches, and perhaps a general increase of the disease.

Case II.

Mary T., æt. 22, a well-nourished, healthy-looking woman, married six months, pregnant three months, came with an

abundant scattered papular eruption, chiefly upon the extremities. It commenced two months before she applied for relief, and was first noticed on the flexor surface of the left arm, then on the left knee, next upon the loins and right arm, and latterly it has affected both surfaces of the limbs. Never had any skin-eruption previously. Some large patches are seen at intervals upon the arms, but the largest are inside the knees. They are formed by coalescence of the smaller papules. Many groups of the latter assume a somewhat quadrilateral shape. They are glossy, slightly raised, and give rise to severe itching. The colour is dusky pink. No history or suspicion of syphilis.

Warm alkaline baths were ordered, and a lotion, containing half a grain of perchloride of mercury, with eight minims of dilute hydrocyanic acid, and two drachms of glycerine in the ounce, was to be applied to the eruption.

Citrate of potash was given internally. In a week no relief was obtained. The oxide of zinc and calamine paint was next ordered, and this proved of much use in subduing the itching and soothing the affected parts. The patches looked less red. Hairs were seen to emerge from the papules and coalesced groups of them, but no desquamation was apparent. Four minims of Fowler's Solution were ordered, thrice a day. The following week there was marked relief, and the eruption was commencing to fade.

Lichen ruber.

One well-marked case of the disease has been under my care.

P. L., æt. 19, a cabinet-maker's apprentice, living in Whitechapel, was admitted into Radcliffe Ward on May 16, 1872. The following notes are extracted from the report of the clinical clerk, Mr. Jepson:—Patient is sparely nourished, has not much integumentary fat, and is undersized. Hair of scalp is plentiful, and dark brown in colour. Has hardly a trace of growing beard or whiskers. Hair in axillæ and pubes natural, also the eyebrows and eyelashes. On other parts of the body, only soft and downy hair (lanugo) is visible. Tongue clean, tremulously protruded. Pulse 96, regular, soft. Respiratory and cardiac sounds natural; abdomen likewise natural. Urine acid, sp. gr. 1,005, free from albumen; bowels regular. Is of very nervous disposition.

The skin of the entire body is covered more or less thickly

with a red papular eruption. In many places there is desquamation of small silvery scales, which are thrown off from the individual or coalescing papules. The eruption is most marked upon the extremities and front of the trunk. The extensor surfaces are more affected than the flexor, and the papules are most densely clustered towards the elbows and knees, and upon the buttocks. The eruption becomes sparse upon the backs of the hands and feet, also upon the face and neck, and in these localities its intimate nature can best be studied. In places most gravely affected the skin has a smooth and glistening aspect, with numerous partially detached portions of cuticle. The integuments generally are thickened, and more tightly bound down than is natural.

The individual papules are raised, flattened, and at first of a crimson colour; subsequently they become paler. They are likewise glossy; and in this respect, as well as in their flatness, they resemble the elements of lichen planus. After a time (within a week, according to my observation) a small whitish speck of desquamated cuticle appears, and is subsequently liberated; there also remains a thickened mass of epidermis in many of the papules, which can be picked off with the point of a knife, not unlike a small corn. There is hardly any itching or irritation. The palms of the hands and soles of the feet are much thickened, and very hard from dense layers of epidermis. There is no change in the nails, and no tendency to rhagades.

On the scalp there are scattered papules of the same character as described above.

The cutaneous circulation is evidently modified by the altered state of the structures, for a few moments of exposure to the air of the ward causes the lad to assume a livid and purplish tint; and this is most obvious upon the extremities, especially about the elbows and knees. Indeed, as was suggested by one of my colleagues, the disorder in this instance might fitly be termed lichen *purpureus*.

The lad declared that he never perspired in the hottest weather, but the axillæ were sometimes found to be moist while he was under observation. Mr. Godart took a cast of one of the legs, and made a water-colour drawing for the Museum.

The history was, that one day, ten years ago, he discovered this eruption all over his body: he is confident that it appeared suddenly, and he has never since been free from it. Sometimes there is more of it present than at others. On various occa-

sions he has been under medical care, but has not received benefit from either local or constitutional treatment. He has been able to do his work till within a few weeks. Has lived well, and had no illnesses. His father is living; mother died of 'dropsy,' and no member of his family has had any skin-affection. He was ordered good diet, with wine, cod liver oil twice a day, and an alkaline bath three times a week.

This case corresponds in many particulars with the affection styled 'lichen ruber' by Hebra. The manner in which the hair of the scalp, axillæ, and pubes is left unaffected is certainly peculiar, for the hair-structures elsewhere are manifestly much involved. No hairs emerged from the papules, and the adjacent hairs on the body were merely soft and downy. Hebra especially draws attention to these facts.

There is a difference, however, as to the irritation, which was generally severe in Hebra's cases, and also as to the state of the nails, which that author describes as gravely affected. Neither were there any fissures about the fingers.

The diagnosis in this case was kindly confirmed for me by Mr. Jonathan Hutchinson, Dr. Tilbury Fox, Dr. Hilton Fagge, and others, who examined the patient; and I at first followed the recommendation of Dr. Fox in employing only cod liver oil and alkaline baths in the treatment.

It was manifest that the disease spread by the coalescence of papules, and not by peripheral extension.*

In a month this patient showed decided signs of improvement. His skin became more supple, and the formation of fresh papules diminished. The general health improved. The urine became of higher specific gravity, and at times deposited oxalates. His temperature was about 99° F. During some hot weather he began to perspire upon the trunk, face, and extremities.

Subsequently there was a fresh outbreak generally of the disease. Numerous red papules appeared, especially upon the trunk and face, and it was observed that several occurred upon two large vaccination scars on the right arm. Only on one of these could one or two downy hairs be seen, and it thus seemed obvious that the hair-follicles were not the only structures affected in this disease.

* An excellent account of this disorder is given by Dr. Tilbury Fox in a Clinical Lecture published in the 'Brit. Med. Journal,' April 15, 1871. Dr. Fox also exhibited a case at a meeting of the Clinical Society last winter, of which a report will, no doubt, appear in the forthcoming volume of the Society's Transactions. Those cases are interesting, as illustrating the nature of the disease as met with in England.

Cod-liver oil and alkaline baths were persisted in for five or six weeks, and, as the disease was manifestly increasing, arsenic was given in four-minim doses of Fowler's Solution three times a day. This was increased to six minims, but with no remedial effect. (July 30.)

Congenital Xeroderma, or Ichthyosis simplex.

Three cases of this affection have come under notice.

Case I.

E. G., æt. 23, is a spare, fair-haired, single young woman. Though not robust, she is not delicate, and has had no severe illnesses. The skin of the face appears peculiarly smooth and tense, and has a tendency to crack and peel off. This condition is more marked upon the trunk and lower limbs, where large flakes of epidermis loosen and become detached. Upon the legs these fish-like scales are very apparent, and the parts appear and feel as if they had recently been painted with collodion. The hands are small, and the fingers especially so; the skin in these localities being very hard, and tightly bound down and crumpled. There is no redness of surface anywhere. The palms of the hands are peculiarly horny and thickened, although the patient does no laborious work of any kind. The soles of the feet are not affected. There is no apparent want of development in the metacarpal bones, as has been observed by Mr. Erasmus Wilson in some of these cases; the proximal phalanges, however, appear unduly small. In winter time and during the prevalence of easterly winds this patient suffered severely, and her skin became very rough and scaly in consequence. Mr. Godart made an excellent coloured cast of one of the forearms and hands for the Museum.

Her mother stated that the disease had existed from the time of her birth. A sister, æt. 39, and a brother, æt. 27, are similarly affected, and have always been so. The sister is married, and has a family with healthy skins. There are four other unaffected brothers and sisters. Both parents are likewise unaffected.

Warm alkaline baths and the constant employment of glycerine of starch have been of much service as palliatives. Cod liver oil was given internally. After eighteen months of treatment, there is no appearance of return to a normal condition, and the disease is probably incurable.

Case II.

J. G., æt. 8 years, a fair, well-nourished boy, was brought by his mother on account of the dry and scaly state of his skin. This was first noticed three months after birth. The disease is partial in this instance, and presents the same characters as in the last case, there being no redness, and the crackling of the layers of cuticle taking place in the lines of motion of the surface. The skin presents a dry, scaly appearance upon the back and front of the chest, and on the upper arms. The legs are rough, especially below the knees and on the calves. The forearms, hands, soles, lower abdominal and pubic regions are smooth, soft, and natural. The cheeks are very ruddy and cracked, and there is erythema about the mouth; also lippitudo. The boy is not observed to sweat. His mother reports that he was 'a poor baby, and had scalled head for some time.' Alkaline baths and glycerine of starch were employed, as in the former case, and cod-liver oil was given.

Some months afterwards the mother came with patches of very scaly psoriasis upon the knees and elbows. She stated that she was only free from these when pregnant, or when under special treatment for them. She has suffered thus for eight years, and never had psoriasis before that time. There was no history of syphilis, nor did I suspect any.

The boy improved in his general health, but the xeroderma remained unchanged.

Case III.

A girl, æt. 5 years, was admitted into the Eye Wards to be operated upon for ectropion. She was undersized for her age. She was the subject of xeroderma upon the arms, upper part of trunk, and legs. The lower part of the abdomen, the buttocks, and thighs were free from the disorder. Her case was exactly similar in other respects to the preceding one. Her mother being dead, very little history could be obtained; her relatives, however, stated that she had always been affected with the disorder, and there were no other cases in the family.

Case of Brown (True) Ichthyosis.

The subject of this affection was a boy, G. T., æt. 2 years, well-grown and healthy-looking, with fair hair. Patches of raised papillary outgrowth, of brownish-grey colour, were situated in the right axilla, upon the thorax and lateral region,

on the skin over the deltoid muscle, near the olecranon, styloid process of ulna, and upon the distal phalanges of the ring and middle fingers of the right upper extremity. A small patch was also found on the right side of the pubes, perineum, and scrotum. Along the inner side of the right thigh a narrow linear patch extended as far as the inner condyle of the femur, and a small streak was seen behind the inner malleolus. In the lateral region the patches were narrow and gyrate.

It was manifest that the affection was confined entirely to the right side of the body, and nowhere transgressed the medial line.* The patches and streaks were not all equally brown in colour. Those in the axilla were the darkest, while those upon the phalanges, thigh, and ankle were the most pale. They felt very rough, and on pinching up the skin in the darkest places, fragments of the outgrowths could be detached by the fingers. When the skin was stretched, the small projections were seen to be warty in character, pink in hue at their bases, and becoming darker towards their free extremities. Numerous hairs were visible between the files of papillæ.

On the hand and ankle, where the growths were most recent, there was, as already stated, less colour, and less of the shaggy appearance: the appearance resembling, indeed, a congeries of small flattened warts. The mouth was natural in respect of the tongue, gums, teeth, and buccal membrane.

The disease was congenital; it was, however, slowly spreading by distant patches of outgrowth. The skin on the unaffected parts of the body appeared to be natural in all respects. Some of the tips of the dark papillary processes were removed and microscopically examined. They were found to present the appearances depicted and described by Dr. Hilton Fagge in his paper on Ichthyosis,† and his observation respecting the shed and imprisoned hairs with brush-like roots in these processes was perfectly confirmed. The concentric thickening around the hair sacs was also well seen in sections made transversely. The disease therefore consists of epithelial formation, the layers of cells being moulded upon the dermal papillæ, which are likewise hypertrophied. Owing to the length of time occupied in the growth of these processes, dirt and sebaceous matters become incorporated with the cells, and are mostly collected at the free extremities, giving rise to the brown colour. Soft soap was ordered to be rubbed into

* In Dr. Church's case ('St. Bartholomew's Hospital Reports,' vol. i. 1865), the disease was confined to the left side of the body.

† 'Guy's Hospital Reports,' 1870.

the axilla, and upon the other patches on the body. Decided improvement ensued upon the adoption of this plan, but this was merely due to the removal of the free ends of the processes, the deep-seated formative structure being in no degree influenced.

I believe this case illustrates the form of ichthyosis known as brown ichthyosis. It is quite certain that the deep structures of the skin were affected, and that the appearances were not due to collections of sebaceous matter.

Of false or sebaceous ichthyosis I have seen several examples in adults. A few days of treatment with soft soap sufficed to remove the accumulations of dirt and sebaceo-epithelial matters, and left the surface below clean and of natural colour, though somewhat hard and rough. It is quite conceivable that in certain persons with partial xeroderma, accumulations of scales and dirt may lead to an appearance of something resembling brown ichthyosis; there will be found, however, only flattened scales, and not papillary processes, as in the true disease.

Case of Morphœa (Keloid of Addison, Scleriasis).

J. M., æt. 20, a clerk, came as an out-patient on May 10, 1872. He is undersized, of somewhat sallow complexion, has brown hair, and hardly any beard or whiskers. He stated that seven weeks previously he first noticed a change in the appearance and texture of the skin on the left side of his forehead. He had experienced no pain or peculiar sensations in this region either before or after the change occurred. Suffered till within the last two years from frontal head-aches.

There is now apparent a smooth, slightly depressed, and glossy patch on the left frontal region; and the integument here is paler than that immediately adjacent, slightly tawny, eburnated, and tense. It cannot be pinched up, owing to loss of mobility and suppleness. At the edges of the patch a faint mauve tint is seen, due apparently to vascular change in the unaltered integument. The left eye-brow is unaffected. The affected area commences about a quarter of an inch above the level of the eyebrow, and extends upwards upon the hairy scalp, where a slight branny desquamation is seen, as well as loss of hair. The hairs have both fallen out and broken off short, as is the case in areate baldness. Towards the temporal region the affection appears to be spreading, and a portion of sound skin is probably undergoing the indurating change.

On one occasion, while under examination, the patient became faint, and subsequently sweated profusely about the head and face. It was distinctly seen that the affected parts of the skin were absolutely dry, while the immediately adjacent parts were bathed in perspiration. There is no fine hair on the patch. The sensibility is blunted, but not lost, in the indurated parts.

No light was thrown upon this case by a consideration of either the family or antecedent history.

A microscopical examination of the broken-off hairs, and of those that were loose in their follicles upon the affected part of the scalp, showed that irregular growth had occurred from the bulb upwards. The contour of the hair was rough and rugous, much narrowed above the bulb. There were no swellings, and no brush-like frayed-out ends at the point of fracture. The loose hairs did not present any specially noteworthy changes; some of them, however, appeared to be twisted on their axes above the bulbs.

The parts affected in this case are in the area of distribution of the supra-orbital branch of the fifth nerve; no trophical changes have occurred at or quite near the exit of the branch from its foramen. Mr. Jonathan Hutchinson is of opinion that this disease generally follows nerve distribution.* Other observers, however, have not specially noted this; but I think Mr. Hutchinson's observations go strongly to support his views upon this point.

Mr. Erasmus Wilson has seen three or four cases upon the forehead,† 'where it resulted obviously from paralysis of a branch of the supra-orbital nerve'; and he records an interesting case which occurred in a young man of the same age as my patient, and where the affection was first observed after a fit of excitement. It spread from the inner end of the left eyebrow, and ran upwards to the margin of the hair. Subsequently a patch of alopecia appeared on the summit of the head to the left of the middle line, and at some distance from the end of the streak. This case was known to have lasted six years, and it changed in parts from morphœa atrophica into morphœa tuberosa, sensibility being better marked upon the raised than the depressed portions. Mr. Wilson believes that Morphœa is a relic of true leprosy; but, as Mr. Hutchinson has shown, this affection is very rare in Norway, where leprosy is common, and dermatologists in that country do not recognise any connection between the two diseases.

* 'Demonstrations of Skin Diseases at Skin Hospital, Blackfriars.' (June 1872.)
† 'Diseases of the Skin,' 5th edit. p. 404.

June 7. The patch is spreading upwards on the scalp, and the hair is falling as the induration progresses; bundles of it can be pulled out with ease. Complaint is made of pain and tenderness over the whole frontal region and vertex, and there is increased sensibility to pressure upon these parts of the scalp, although sensibility is duller and perverted on the affected band. There is also a tingling sensation experienced across the bridge of the nose.

No local application has been hitherto employed. Ordered quinine in the meantime. Mr. Godart took a cast of the face and scalp, to be coloured and prepared for the Museum.

Acne rosacea.

Two or three very severe examples of this affection have been under observation. The worst case I ever saw was in the person of one of the Hospital nurses, æt. 29, a married woman. Her husband was a soldier, serving in India, and she had a child of five years of age. Her face presented a hideous series of purplish red blotches and bosses, situated chiefly upon the nose and chin, though there were scattered patches on the forehead and cheeks. When she first came (April 1871), there were no points of suppuration. The skin was most altered upon the chin, for a considerable infiltration of new growth had occurred here, and an uniform purplish red layer projected for a quarter of an inch from the adjacent unaffected skin. This part of the disease reminded one of some tubercular or lupoid affection. In the course of a week some suppurating points appeared in various places. Around the eyelids and on the temporal regions were numerous specks of milium.

She stated that she had been always healthy. There was no reason to suspect indulgence in strong drinks. Three years previously the disorder commenced as 'a small pimple, which came upon the chin, and spread, but not beyond the chin.' It never disappeared, but was sometimes worse than at others. Other similar spots appeared elsewhere on the face. She was successfully treated at the Blackfriars Skin Hospital, where she was an in-patient. Some of the swellings were punctured, and some were cauterized, but better results followed the former practice.

Mr. Godart secured a cast of this patient's face for the Museum.

The treatment was commenced with a short course of perchloride of mercury, followed by quinine and steel, with

sulphate of magnesia. Locally, oxide of zinc and limewater lotion, with glycerine, was applied, and subsequently the lotio calcis cum sulphure* was used. Of the latter I have a high opinion, and I find it of real value in severe cases of acne. Marked improvement took place, and in about two months the disease had almost disappeared. A change to the country from the Hospital was of much service. Some of the more prominent enlargements suppurated, and punctures were necessary; some of the indolent tumours were touched with the acid nitrate of mercury, and appeared to be benefited by it.

This case answers to the description given by Hebra of acne rosacea of the second degree, where, in addition to the discoloured groundwork of the primary form, there are superadded 'tubercles and pustules of ordinary acne'; also 'protuberances of greater or less size, of firm consistency, and without any purulent contents.'†

In May 1872 this patient returned with a slight fresh outbreak of the disorder. In a few weeks, however, she greatly improved under the use of a mineral acid tonic and the application of the sulphur lotion.

She also employed the plan of washing her face in a basin of water in which about a couple of drachms of common washing soda were previously dissolved.‡

A second case of this severe form of acne came under treatment in April 1872. There was some reason to believe that the patient, a man, æt. circ. 30, indulged too freely in strong drinks.

A corrected habit in this respect, with mineral acids and sulphate of magnesia, and the employment of the sulphur lotion, proved of marked value, and the hideous disfigurement was resolved.

Case of Tubercular Syphilide or Syphilitic Lupus.

C. D., æt. 22, a barmaid, single. Is well nourished. Eyes bluish, hair brown. Came in September 1871 with a mass of raised red tubercular eruption upon her nose and forehead. It was very disfiguring, but caused no pain. Between the scapulæ there was also a large patch of similar growth.

* ℞. Sulph. præcip. ʒss.; Spir. Camph. ʒii.; Aq. Calcis ʒiv.; ft. lotio. Dr. R. Liveing gives this formula in his 'Treatment of Skin Diseases.'

† 'On Diseases of the Skin.' 'New Syd. Soc. Trans.' vol. ii. p. 323.

‡ This plan was suggested to me by one of the Hospital pupils attending the Clinique. I have reason to think well of it. The parts should be bathed twice a day.

In the centre of the outbreak on the forehead was a pale cicatrix band, which had much the appearance of a healed patch of lupus. There were also some scattered depressed scars near the mouth and upon the chin, and these were reported to have been formerly red and raised.

All history of syphilis was denied, and there were no signs of the disease in the throat or glands; in short, no concomitants of any kind. The history given was, that a blotch was first noticed thirteen months previously upon the nose, near the inner canthus of left eyelid. The disease spread continuously from this. No history of any previous illnesses. The patient remained under treatment as an out-patient for four months, and during this time the patches increased, became more prominent, almost succulent in appearance, and continued of a vivid crimson colour. There was a very slight scaly desquamation in parts, and at a few points breaches of surface occurred, followed by oozing of albuminoid fluid, which formed crusts. I, in common with others who saw the case, believed it to be a form of lupus. The cicatrix band in the centre of the frontal patch seemed to strengthen the opinion. The treatment consisted in the local application of bismuthic subnitrate, and at times tar was applied to part of the growth. Cod-liver oil and arsenic were likewise given internally. As already stated, the disease spread. I admitted the patient into Mary Ward in December, and soon afterwards she confessed to having attended the Hospital as a surgical out-patient in July 1870, with a venereal sore upon the genitals.

A month subsequently she declared the first blotches appeared upon the face.

It transpired later that the frontal cicatrix was the result of an injury, and not due to the present affection.

The patch across the superciliary ridges measured 5 inches; from the tip of the nose, which was now fully invaded, to the scalp, which had become affected and much denuded of hair, the measurement was $5\frac{3}{4}$ inches; across the centre of the nose, $3\frac{3}{4}$ inches; and the dorsal patch was 5 inches long by $4\frac{1}{2}$ in breadth. The eyelids were almost closed by the disease and the œdema resulting from it. Iodide of potassium was now given, with bark and ammonia; also cod-liver oil. Doses of five grains were given thrice a day at first, and increased gradually up to a scruple. In a week there was manifest improvement. The patches became flatter, less succulent in appearance, and a coppery tint was for the first time noticeable. The hair began to grow on the fore part of the

scalp, and the general health improved. Occasionally the patches were brushed over with a solution of bi-cyanide of mercury (gr. v. ad f℥i), and this appeared to assist in the removal of the stains which remained after the bulk of the disease had subsided. The circulation in the nose was feeble for some time, and the application of an interrupted electrical current proved of service in improving this. In three months the patient left the Hospital, perfectly free from the disease. She shows herself occasionally at the Clinique, and has had no return of any tubercles. The complexion is likewise steadily improving. Mr. Godart succeeded in securing casts of the face, both during the height of the disorder and after the recovery.

Note on the Treatment of Psoriasis by simple inunction with Olive Oil.

My attention was first directed to this method in a most obstinate case which occurred in a woman of middle age. No internal or external means seemed to be of any avail, and the patient began the oil frictions upon the recommendation of a neighbour, who had seen them employed in her native country (Germany). The disease completely disappeared, under this treatment, in a few weeks.

I have since enjoined the same in several instances, and certainly there are cases in which it is available. I believe that the majority of instances of psoriasis are curable by persistent inunction of pitch, and the exhibition of arsenic in as full doses as can be borne. But occasionally we meet with cases where neither of these remedies can be borne. The patches are always rendered supple, and are soothed by the oil, and the amount of scaliness is diminished. Patients do not object to employ the simpler method, and are more likely to persist with it than with pitch inunction. I think, therefore, that we may use olive oil when the patches are very irritable and show tendency to fissures; also at the commencement of an outbreak of psoriasis, when the first and more recently-formed spots are tender and sensitive. I sometimes add carbolic acid to the oil, in the proportion of one part to forty, and I find that this allays the smarting. It is occasionally useful to employ water-dressing to irritable patches for some part of the twenty-four hours, and apply olive oil in the interval. In one severe instance the patient hit upon this plan for herself, and was much pleased with it.

Article VII.—*On the Molluscum Contagiosum of Bateman.* Part II.* By Dyce Duckworth, M.D. Edin.

In this paper I purpose to record my recent experience of this disease, and to review briefly the various theories that are at present held concerning its nature.

In my former article upon this subject I adduced much evidence in favour of the contagious theory; and, while a more extended acquaintance with the disease has in no wise shaken my belief in that view, I think it must be conceded that this is not a constant feature of the disorder, and that other causes must be included amongst the excitants of it.

A number of cases have come before me during the last two years. In several families there were as many as four individuals affected. The following case presented a noteworthy peculiarity. A little boy came with a distinct umbilicated tumour of molluscum upon the centre of the lower prolabium. I am unable to explain its existence in this situation. There could be no doubt as to the diagnosis, for, on removal of the enucleated tumour and subjection of a section of it to the microscope, I found the usual loculi and epithelioid elements.† There were no hairs on the prolabium. According to the generally received views of the pathology of this form of molluscum, it is difficult to account for the appearance of the tumour in this locality, there being neither hairy nor sebaceous structures normally present. My friend Professor Turner, of Edinburgh, informs me that there are no glandular structures in the intermediate portion of the prolabium—the part between the cutaneous and buccal mucous surfaces. With reference to this particular case, he offered the following suggestion, which is well worthy of attention. He thinks it is just possible that a molluscum tumour may 'point' from the hairy and cutaneous surface towards the prolabium proper, and thus it may make its appearance in this unusual locality.

I feel inclined to place this case in the same category with those examples of molluscum fibrosum where tumours have been found on the hard palate, and on the palms of the hands, as occurred in a case lately under the care of Mr. Savory, in the Hospital, and also in one of Dr. Hilton Fagge's patients.

* For Part I. see 'St. Bartholomew's Hospital Reports,' vol. iv. p. 211.

† Ibid. vol. iv. loc. cit.; also 'Guy's Hospital Reports' (Dr. Hilton Fagge's paper), 1870.

I think it is to be observed that molluscum tumours vary in their rate of growth. Sometimes the formation is extremely tardy, and many months elapse before they become full and prominent. Again, instances occur where the tumours appear to be formed more rapidly. Inherent tendencies or variation in amount of local stimuli may probably account for this difference.

It may, I think, be fairly stated that the pathological anatomy of molluscum contagiosum has been exhaustively worked out.

The latest definition of these tumours that I have met with is that of Rindfleisch,* who describes them as 'wart-like prominences as big as a pea, differing from other soft warts, which resemble them only in having their centres occupied by a dilated hair-sac, which secretes fatty and epidermic products in abundance.'

I mentioned in my former paper† that ordinary warts were sometimes believed to be contagious, and that perhaps examples of molluscum had been mistaken for them. The propagation of the latter growths seems sufficiently intelligible. I have lately seen two cases of molluscum contagiosum in which ordinary warts were found upon the fingers.

Rindfleisch thus expresses himself upon the moot question of contagion: 'It has been asserted that these matters are capable of transferring the disease to the skin of a healthy person. The assertion rests on a very doubtful substratum of evidence; it has given rise, however, to the questionable epithet "contagiosum."' This disease certainly appears to be more common in Great Britain than on the continent of Europe. There is certainly no lack of cases in London hospital practice. It is seldom that I have not one under treatment in the Clinique, and frequently there are half-a-dozen cases in attendance. Dr. Walter Smith, who conducts the Skin Department at the Adelaide Hospital, in Dublin, informs me that the disease is rare there. In an analysis of 1,100 of his hospital cases he mentions but four cases.‡ Dr. McCall Anderson, of Glasgow, in an analysis of 10,000 dispensary cases, met with only six examples of this affection; and amongst 1,000 private cases of cutaneous disease did not once meet with molluscum.§ He calls attention, however,

* 'Manual of Pathological Histology,' New Sydenham Soc.'s Trans. vol. i. p. 390.
† Loc. cit.
‡ 'Dublin Quarterly Journal of Med. Science,' Nov. 1871.
§ 'Lancet,' Dec. 1871.

to a noteworthy fact in connection with these statistics of the disease. It appears that many patients suffering from molluscum in the neighbourhood of the eyes resort to oculists for treatment, and thus their cases do not swell the lists of the Skin Departments. The disease is rare also in Edinburgh. I never saw a case during my residence there. Dr. Begbie informs me that he never had reason to believe that the affection was epidemic, and he never saw it in the better classes of society.

There can be no doubt that molluscum is more commonly met with amongst the lower orders, and especially amongst the children in crowded communities. But it is seen occasionally in persons who are well born and who follow the rules of hygiene. Mr. Erasmus Wilson has met with it, he informs me, among children well cared for in every respect, and also among adults. 'I have especially in my memory at this moment the case of a Jewess of lymphatic temperament, with flabby skin. Again, a young man, a foreign consul, in whom it was situated on the scalp, and was the sequela of a severe frontal herpes. I have met with it on the scalp and shoulders of the son of a peer; on the breast of a gentleman of position; and in a case, now under treatment, pretty generally distributed over the trunk of the body and limbs. In all the three latter cases the disease was excited by the Turkish bath, and seemed to be the consequence of a kind of reaction occurring after hyperstimulation of the skin. The last-named gentleman, about 50 years of age, had about 200 mollusca distributed over his skin. The case in which the disease followed herpes frontalis was an interesting and suggestive example of irregular growth and nutrition (hypertrophy), consequent upon damage done to the skin by a severe neurotic affection.'*

Mr. Startin informs me that he has occasionally seen this disease amongst the children of the upper classes, and lately saw a lady who presented several tumours upon the neck. She had been nursing a child who had a good crop of it. Mr. Startin thinks the disease is certainly ten times more common amongst the lower than the upper classes of society.

Dr. Paterson, of Leith, whose name is familiar to all conversant with the literature of this disease, informs me that he has seen it in the upper classes, but that the great mass of cases occurs amongst patients of the ranks that attend dispensaries. He states that his later experience corroborates his

* Private letter from Mr. Wilson.

earlier views, and Bateman's original idea, that the disease is communicable from individual to individual. Dr. Paterson also informs me that his later inoculations succeeded, the conditions being that the contents of the tumours were inserted into the mouths of follicles in a tender part of the skin, such as the angles of the mouth, axillæ, mammæ, &c. He has seen the disease upon the mammary areolæ, from contact with the mouths of affected children; and frequently upon the sides of the neck in nursemaids who have carried children suffering from these growths. He is perfectly convinced of the contagiousness of the disease.*

Cases are not unfrequently met with where the complaint commences in a juvenile member of a family, often a baby, and appears to spread in rotation amongst the children. Adults likewise become affected. Such cases appear certainly to support the theory of the contagiousness of the disease. I have several times known the affection to occur simultaneously, or almost so, in two or three families living in the same court, and in these instances the disease has appeared to pass on from the children who met and played together. Mr. Morris, of Stamford Hill,† has lately reported seven cases of molluscum occurring in one family. The father was first affected, then the children, and lastly the wife.

A little girl came to me with numerous tumours upon the chin, which she had had for three months. She was in the habit of carrying about a baby in the same court who had 'warts' upon its face, and she confessed that she often caressed and kissed this child.

Another girl, æt. 8 years, came with four or five tumours; one was upon the outer angle of the right orbit, and situated on a fluctuating cushiony swelling. There was no redness or heat about it. On puncturing it, a quantity of thin watery matter ran out, containing small white flakes. No suppuration had occurred, and it seemed that a serous cyst had formed in connection with the tumour, and had blended its secretion with that of the molluscum. The tumours had existed for seven months. A younger sister had two mollusca on her face, which came some months after this case occurred; and recently a tumour has appeared on the baby in this family,

* Dr. Paterson has kindly permitted me to record in this place the results of his later experiments. In three or four cases he succeeded in producing 'a goodly set of enlarged sebaceous glands, secreting a milky fluid, and in every way resembling the disease.' Dirt, he thinks, is an essential element for success in inoculation.

† 'Lancet,' June 17, 1871, p. 843.

æt. 5 months, which is often nursed and kissed by these children.

The following cases have also come before me. A girl, æt. 9 years, had tumours about her mouth a month before her next (younger) sister had them about her eyelids. In four or five months afterwards several mollusca appeared on the baby's left cheek and left temporal region. The last two cases came for treatment, and Mr. Godart took a cast of one of them for the Museum Skin Collection.

A boy, æt. 2 years, was brought with many tumours upon the face and neck. They were of all sizes and forms, some fully pedunculated, others sessile, and approaching the terminal ulcerating stage; others, again, were small and resembled milium. The growths were removed either by the knife or by the acid nitrate of mercury. The history was, that the child had been more or less affected with these tumours for nine months; that a sister, æt. 16, had a similar tumour on her eyelid twelve months before, and that her next brother had one on his forehead a month after hers was observed.

The next series of cases, four in number, in one family, was formally brought before the notice of the Clinical Society in April last.* Three of them came for treatment, and were exhibited to the members of the Society. A woman, æt. 24, came to the Hospital suffering from molluscum upon the face and mammæ. The infant which she carried, æt. 16 months, and still suckled, had likewise mollusca upon the face and neck.

The history was, that her eldest child, a boy, æt. 3 years, had had these growths for many months; that she next became affected herself with them; next in order her infant presented these tumours; and lastly, her mother—the grandmother—who lived with them, æt. 54, became the subject of molluscum.

A. P., æt. 15, a dark-haired girl, very dirty and covered with pediculi, was brought by an elder sister with three tumours on the face. One was suppurating, and there were ugly marks where others had formerly been. She had had crops of mollusca for two years, and her sister believed she caught them from an infant nephew (son of this sister) who lived in their house. A younger sister, æt. 13, has lately become affected: she sleeps with A. P.

As there appeared to be favourable conditions for the propagation of the growths in this family, I inoculated the married

* I refer to the 'Transactions' of the Society for full notes of these cases.

sister from A. P. upon and around the right mammilla. As she was suckling an infant, I hoped also to encourage a crop around the mouth of the latter. At the next visit, A. P.'s sister, æt. 13, was brought, and found to have two mollusca upon the face.

E. D., æt. 5 years, was brought with a number of mollusca upon the neck, face, and front of thorax. She had suffered for twelve months from them.

Her mother also brought her baby, æt. 3 months, who had a tumour on the right outer canthus. These two children slept together.

Mr. Davy, of the Westminster Hospital, kindly directed my attention to the following cases, which I saw and investigated:—

M. P., æt. 7 years, suffered from molluscum when she was between three and four years old. The tumours continued nearly two years, when they were removed at the hospital. No more appeared subsequently.

E. P., æt. 5½ years, has three mollusca—two on the face, and one on the left forefinger. She has had them nearly three years, and they came while her sister, M. P., was affected.

These two children slept together.

M. A. P., æt. 20 months, has many tumours along upper and lower left eyelids, and one on left forefinger. She has been affected for nine months.

The mother has not suffered.

Another family lives in the same house, and the children are much in each other's company, but the disease has not spread.

Another sister, L. J. P., æt. 23 months, died of whooping cough, and was never affected with mollusca.

In these instances the tumours have been of very slow growth. It is to be noted further that no recurrence of the disease occurred after the removal of the growths. The second case in the family was established, the infant sister is next affected, but another young child escapes, and the eldest is never reinfected, notwithstanding two cases have been for months in the same rooms with them.

A. N., æt. 3½ years, was brought to me with a tumour, the size of a large hazel nut, at the right inner canthus. It was a suppurating molluscum, which appeared six months previously, and four smaller tumours were found on the face, and one on the left thigh. The child was a fair-haired rickety boy, the youngest of four children. Another family lived in the same

house, but none of the children were affected. A brother, æt. 7 years, was reported to have a wart on his forehead. Next week the latter was brought, and found to have two mollusca on his face. The large tumour was opened with a bistoury, and poulticed for a week. At the next visit a ligature was placed at its base, and in a few days it came away, leaving very little disfigurement.

C. C., æt. 2 years, had a number of tumours on the face and arms for nearly nine months. The baby, 11 months old, had one tumour. Both children were brought for scabies.

Dr. Robert Liveing reports the following cases:*—

Two children—a boy, æt. 13, and his sister, æt. 7 years—were brought to him. The former had one tumour of molluscum on the face; the latter had at the same time a dozen or more on the face, and two or three on the forearm, some of them very small. They were treated either by removal or by caustic. In a fortnight a new crop had arisen about the head and face, and for several months new tumours continued to appear, till, at last, no more were formed.

In the meantime, another sister and two brothers of the same family, all under 12 years of age, came under Dr. Liveing's care, and were six or eight weeks under treatment. They all recovered, and had no recurrence of the affection. In connection with these cases, Mr. Balmanno Squire reported in the next number of the same journal a series of three cases occurring in children of one family, and affecting all three within a period of a few weeks. He sought to explain the apparent contagiousness by an examination of the contents of the tumours, with a view to discover the existence of a parasite, and he described what he believed to be spores, larger even than those of the achorion.

After the foregoing narration of cases which appear to bear out more or less satisfactorily the epithet 'contagiosum,' it is only right that I should record some other cases which have come before me, and which yielded no history of contagion.

Case I.

A lad, æt. 14, a printer's apprentice, came with nine tumours over the right hypochondrium. One came at first, two months before he applied at the Hospital; subsequently the others appeared. No history of contagion was attainable.

* 'Brit. Med. Journal,' Jan. 6, 1872, p. 12.

Case II.

A young woman, æt. 22, came with six or seven tumours upon the face, and one upon the left wrist. She had suffered from them for six months. They were mostly very small, with the exception of one well-formed one upon the right upper eyelid. The latter was removed by the knife and forceps, and the remaining growths were touched with the acid nitrate of mercury. There was no history whatever of contagion.

Case III.

A stout young man, æt. 21, came with five or six tumours upon the abdomen, near the umbilicus. There were also some upon the thighs. No history of contagion.

Case IV.

A child, æt. 2 years, was brought with three or four tumours on the face, which had existed for some weeks. There were four unaffected children at the time at home.

Case V.

M. F., æt. 34, a labourer, the subject of advanced phthisis, came to my out-patient room with three tumours upon his right eyelid, one on the upper lip, and one at the left angle of the lower jaw. He had had them for three weeks. He stated that his wife and three children had no such growths, and he could not account for their appearance.

Case VI.

A. J., æt. 39, patient in Martha Ward, suffering from pelvic cellulitis and abscess in thigh. She has had mollusca for about six months. The tumours first appeared when she was pregnant with her fourteenth child. Four months ago she was confined. There are nine tumours, chiefly about the chin.

Three or four years ago, one or two of her children had mollusca, and it was then believed that they had caught them from an affected child in an adjoining house with whom they used to play. None of the children have tumours at present.

In this case the stimulus of pregnancy may have determined the formation of the growths.

In criticism of these cases, it may be said fairly enough that it is wrong to lay stress upon the statements of patients as to

contagion; and, no doubt, full allowance must be made for careless and defective observation on the part of hospital out-patients. Again, it may be objected that in the fourth case, and perhaps in others, sufficient time had not elapsed to allow a decided opinion to be formed against the possibility of the affection spreading to other individuals.

These considerations, however, only lead us to discuss the different views at present held as to the origin of this disease; and these, I think, may be placed under the following four heads.

Theories as to Production of Molluscum.

1. Molluscum as the result of stimulation of the skin, either by direct means or as a sequela of nerve disturbance with local manifestation, idiopathic molluscum occurring in persons predisposed to affections of sebaceous structures.
2. Molluscum as the result of contact with the secretion of pre-existing tumours in another individual.
3. Molluscum as the nutritive change induced by the direct irritation of a vegetable parasite in sebaceous structures.
4. Molluscum occurring as an epidemic.

I believe that all the existing theories of this affection are included in the above list.

Under the first head must be classed such cases as Mr. Erasmus Wilson has mentioned where the disease ensued upon taking Turkish baths; likewise those where it followed a neurosis such as herpes. Again, the following case, which is related by Neumann,* may be regarded as of nervous origin, in a person specially predisposed, perhaps, to sebaceous affections. This dermatologist saw molluscum as an acute affection on the face of a woman (during pregnancy), and the disease spontaneously disappeared during the puerperal state. In this instance the disease may be considered in the same category with chloasma uterinum, the stimulus of pregnancy being reflected upon the sebaceous, instead of the pigmentary, structures of the face. (Vide Case VI. reported above.)

The second theory, that of direct contagion, attracts most supporters. The bulk of the evidence as yet derived from inoculation of the pultaceous secretion of these growths is not in favour of the theory. The experiments of Dr. Paterson, already alluded to, are the only successful instances I know of. Many of the German inoculations were probably made from cases of

* 'Text-Book of Skin Diseases.' Trans. Dr. Pullar, 1871, p. 63.

fibroma molluscum, which would certainly not be likely to yield examples of sebaceous molluscum. I have on many occasions tried to induce the disease in this manner both upon myself and upon the Hospital pupils, but I have always failed. Care has been taken to rub in the secretion upon hairy parts, and to prevent subsequent removal of it by washing.

Next, we have to account for such cases of molluscum as furnish no history or likelihood of contagion; and although this is not in many instances easy to do, still it is sometimes justifiable to believe that cases occur which have not resulted from contact with affected individuals.

The third or parasitic theory of the origin of molluscum was first broached, I believe, by M. Hardy, of Paris.* It has not attracted much attention. Mr. Squire † lately called attention to certain bodies resembling spores which he found in the tumours of the cases I have already alluded to. He described them as being larger than those of the achorion, and as possessing a facetted outline, with angles, as if slightly worn. He found no mycelium. M. Hardy, however, described branching tubes containing spores. Mr. Squire found also a distinct oval nucleus similar to that found in the spores of favus. He remarks that sebaceous growths are for the most part tardy, but thinks the rapidity of formation of mollusco-sebaceous products is due to the stimulus of the parasite in the follicular structures.

Mr. Squire was very careful to avoid errors in his examination of the secretion of the tumours. To obviate the difficulty arising from the large amount of fatty matter in this product, the sebaceous mass was digested for many hours in ether. Subsequently to this process the spore-like bodies were detected. Mr. Squire does not, however, describe any other structures that he met with in examining the æthereally-exhausted mass. No mention is made of the epithelioid elements proper to this secretion, nor of the influence of the maceration in ether upon them.

The most recent examination of these growths has not revealed any such structures as Mr. Squire describes. Full accounts of the histology of this affection have been recorded within late years by Virchow, in his work on Tumours, by Dr. Hilton Fagge,‡ and by myself.§ I would, however, venture to offer the following explanation of the appearances described by

* 'Leçons sur les Maladies de la Peau,' deuxième partie, p. 96.
† Loc. cit.
‡ 'Guy's Hosp. Reports,' 1870. § Loc. cit.

Mr. Squire. I do not believe that the bodies described by him are spores, and I suspect that they are the proper elements of the molluscum secretion modified in appearance by their subjection to maceration in ether. Although the tumour examined was 'digested for many hours in ether,' and thereby, 'very considerably shrivelled,' I do not believe that all the fatty matter was removed from it. At all events, I have found it to be a very difficult matter to remove by this process the fatty particles in the structures surrounding the roots of the hairs, and again and again I have seen refracting fatty granules come out of these sebaceo-cellular elements after prolonged maceration of hairs in ether. The facetted appearance of the spores described by Mr. Squire is noteworthy. He states that he has seen the same in the case of favus.

Mr. M. C. Cooke, in his 'Handbook of British Fungi,' describes the spores of the *Achorion Schœnleinii* as 'ovoid, triangular, or quadrilateral, with the angles rounded, variable.' The best illustrations of these bodies that I know of are those drawn by Dr. Bristowe for his excellent essay on Skin Diseases, in the first volume of the 'St. Thomas's Hospital Reports.' The appearances, as witnessed under a magnifying power of 900 diameters, are well depicted, and no such facetted outline is figured. I think that no one clinically conversant with the microscope could mistake the spores of favus or any similar structures for the elements of molluscum secretion, and it has yet to be shown that such bodies exist in these growths apart from their natural contents.

I am therefore of opinion that the parasitic theory of the production of molluscum must be held to be 'not proven.'*

Lastly, it has been suggested that molluscum is an epidemic affection.

In discussing his series of cases, which I have reported in this paper, Dr. Liveing remarked that either the disease was contagious or it was epidemic; and he further stated that the fact of brothers and sisters suffering from this affection will not explain its occurrence at about the same time in all, even supposing that there was an hereditary tendency to its development.

I cannot myself believe that molluscum is an epidemic affection. If this was the case we should expect the disease to

* Neumann, quoting Virchow's observations upon the nature of molluscum secretion, remarks: 'In regard to the parasitic nature of these bodies (i.e. elements of the secretion), it may be observed that they somewhat resemble the globular psorosperms which occur in the intestinal epithelium, but they are more like sebum.'

spread more widely than it does from established centres of it. The arguments in favour of contagion may be sustained with much greater certainty, and the facts connected with its spread in this manner must be borne in mind in discussing the epidemic theory.

In the case of porrigo, or impetigo contagiosa, we have, I venture to suggest, an example of a contagious affection which is likewise apt to spread largely at times; and, according to my experience, the disease does not seem to be constantly prevalent in London.

It is found that even when molluscum affects a number of individuals, they are either members of one family or of a small community living in the same house; or, if other families or individuals be simultaneously affected, their residence is not far distant, and connection may be traced between them by the children or infants of the respective families.

A point in the clinical history of the disease which appears to favour the epidemic theory is this, that after a certain period the little growths cease to appear. Crop may succeed crop for weeks or months, but afterwards no more are formed. In practice we destroy or remove each tumour as it appears; but we have no control over the formation of fresh ones. Why does the affection cease? I think the reply to this question is to be found in a distinction which must be made between promiscuously occurring cases of molluscum.

I believe that infants, young children, and women are more prone to the disorder than adult males; and this is probably because of the tender skins of the former and the greater excitability and activity of their sebaceous systems. In these cases we may appropriately employ Mr. Erasmus Wilson's term for the disease, and style it 'm. adenosum.' It is in the persons of young children or young women that we most frequently meet with recurrence of crops of tumours, and it would seem that there is some special predisposition to sebaceous glandular excitement in such cases. Mr. Wilson, indeed, would regard this as the essence of molluscum, and the fact of contagion as an occasional accident, these growths being only contagious in a modified degree. We do, in fact, often cure infants of the disease, i.e. of all their tumours; but, before long, they are brought back to us with a fresh crop, and we can obtain no history of contagion. Is the affection epidemic in such instances, because it is not proved to be contagious, or is there not rather some special tendency to the affection, with some special exciting cause?

In the case of adults, where the growths appear to result from contagion, the destruction of them is usually coincident with the extinction of the disorder, and no fresh tumours appear; but this may not always be the case, either because the individual has special predisposition to the affection, or because there are special exciting causes at work.

Most observers are agreed in attributing a large share in the causation of the disease to dirty habits and non-observance of ordinary rules of hygiene; but there is evidence also to show that molluscum may appear, and in a severe form too, upon persons so exceptionally clean as the frequenters of Turkish baths in the west end of London. We must then, I think, allow that more than one exciting cause is at work in the production of these sebaceous growths, occurring indiscriminately upon British subjects differing so widely in their circumstances as do the infants of Scottish fishwives and 'the sons of peers' resident in London. It is curious that Jewish families, in London at all events, furnish a considerable proportion of cases.

The foregoing discussion of the various theories of molluscum formation leads us, I believe, to the following conclusions:

1. That infants, young children, and females generally, are prone to sebaceous disorders by reason of their tender skins, and that molluscum occurs more commonly in such individuals.
2. That certain persons, of both sexes and at different ages, are more than others liable to nutritional changes in their sebaceous system.
3. That molluscum may arise sometimes in consequence of direct stimulation of the skin; also as a trophical change following a local neurosis, or accompanying the condition of pregnancy.
4. That the disorder is undoubtedly contagious under certain conditions, and that dirty habits have much to do with its propagation in this manner.
5. That there is no sufficient reason to believe that the disease results from parasitic intrusion into the sebaceous follicles.
6. That it has not been shown that molluscum occurs in communities after the manner of epidemic affections.
7. That the epithet contagiosum, as originally applied by Bateman to the disease, may perhaps be fairly retained, provided that this be understood in a rightly restricted sense; but if it appears desirable to alter the epithet, then one of those applied by Mr. Erasmus Wilson might be adopted, and the

disorder be termed molluscum adenosum, or m. sebaceum; and to this, in any skin nosology of the future, might appropriately be added, interdum contagiosum.

Article VIII.—*On Cirrhosis of the Liver.* By J. Wickham Legg, M.D. Lond.

In the literature of the last three centuries there exist several single observations* of the morbid state which is to-day called cirrhosis of the liver. Nevertheless, John Andree appears to me to have been the first who recognised its right to a place amongst the kinds of disease. In his 'Considerations on Bilious Diseases,' published at Hertford in 1788, at p. 24, after giving cases of hardened and shrunken livers, he says: 'Another kind of indurated and diminished liver which I have also met with, is that in which its surface is raised in half-rounded eminences, appearing like granulations, covered with the proper membrane of the liver. In one of these cases, the particulars of which I have inadvertently lost, the patient died dropsical.' Matthew Baillie soon after fully described the same appearances under the name of common tubercle of the liver,† a name good enough so long as the word tubercle was clothed with no specific meaning. Meckel also describes cirrhosis, but confounds it with scirrhus and other forms of cancer, under the heading 'Blutschwamm' or 'Marksarcom.'‡ Farre does not seem to have described cirrhosis. § Bichat was certainly acquainted with it.‖

Laennec was the first to give the name of cirrhosis, on account of its colour, to the hardened, shrunken, granular liver.¶ He seems to have been of opinion that the natural tissue of the liver was absorbed, and that the cirrhosis was due to the

* See Morgagni, de Sedibus, &c. Ep. xxxviii. 31. and Vesalius, Opera Omnia, Lugd. Bat. 1725. t. ii. p. 674.

† Matthew Baillie, 'The Morbid Anatomy of some of the most important parts of the Human Body,' London, 1793, p. 141.

‡ J. F. Meckel, 'Handbuch der path. Anat.,' Leipzig, 1793, Bd. II. Abth. ii. p. 318.

§ J. R. Farre, 'Morbid Anatomy of the Liver.' London, 1815.

‖ Bichat, 'Anat. path.,' Paris, 1825, p. 190.

¶ Laennec, 'De l'Auscult. méd.,' Paris, 1819, t. i. p. 368, note.

development of a new growth, which in some manner caused the liver to diminish in size.

But to Andral this view of cirrhosis seemed altogether unsatisfactory. He fell back upon the old notions of the anatomy of the liver: that the liver is made up of two substances, one the white or yellow substance, which secretes the bile, the other the red substance containing the blood-vessels. The morbid appearances in cirrhosis are due to an hypertrophy of the white substance; and Laennec is in error when he imagines that in cirrhosis there is a new formation.* These views have exercised a most baneful influence upon the opinions concerning cirrhosis which have been put forth at Paris; for Andral's statements have been merely repeated, with slight modifications, by those who have come after him. Boulland, for example, thinks there is no new formation in the liver, but a dissociation of the two natural elements of the organ, depending upon an increase of the vascular network, due to repeated congestions, followed by an obliteration of this vascular network. The yellow masses are nothing else but the disorganised secreting granulations of the liver.† According to Becquerel, the yellow substance becomes infiltrated with an albumino-fibrinous material which compresses the red substance, and then, losing its water, contracts, and thus diminishes the size of the liver.‡ Even an author writing so late as Monneret speaks still of the white and the red substance.§ Cruveilhier came near the truth when he described the existence of a fibrous tissue in cirrhosis; he considers the appearance of the cirrhotic liver to be due to an atrophy of some granulations while the remainder hypertrophy to supply their place.‖ Craigie thought that the orange-coloured granular bodies of the liver enlarge and indurate, until they attain the size, shape, and general appearance of kirrhotic granulations.¶

* Andral, 'Clinique méd.' 4e éd. t. ii. p. 243, and 'Précis d'Anatomie path.' Paris, 1829, t. ii. p. 585. Hope, the English interpreter of Andral, endorses his opinions as to an hypertrophy of the white substance, but adds that there is also 'an interstitial deposition in that substance, connected with a lesion of secretion.' ('Principles and Illustrations of Morbid Anatomy,' London, 1834, p. 107.)

† Boulland, 'Mémoires de la Société méd. d'ém. de Paris,' 1826, t. ix. p. 192.

‡ Becquerel, 'Archives gén.' 1840. 3e série, t. vii. p. 407. This author has no opinion of Kiernan's work, because done with the microscope: 'An instrument possessing very high magnifying powers is altogether useless in the study of the organisation of the tissues.' See p. 405.

§ Monneret, 'Arch. gén.' 1852. 4e série, t. xxx. p. 61. There are, indeed, at this moment pathologists in Paris who continue to speak of the red and white substances in the liver. See a paper by Olivier, 'L'Union méd.' 1871. t. xii. p. 402.

‖ Cruveilhier, 'Anat. path.' Paris, 1829–35, t. i. xiie livr. planche 1.

¶ Craigie, 'Elem. of Path. Anat.' Edin. 1848, 2nd ed. p. 896.

Before Kiernan, right views upon the pathology of cirrhosis were well-nigh impossible; and Carswell was the first to show that cirrhosis depended upon an interlobular growth of fibrous tissue.* Hallmann next, being the first to use the microscope in the investigation of this disease, proved the granulations to consist of liver cells surrounded by a fibrous network.† He also found the liver to contain five times more gelatine than natural. Gluge's microscopical observations were published at nearly the same time, but he fell into the great error of imagining fatty infiltration to be the essence of, instead of an accident in, cirrhosis.‡ Rokitansky looked upon cirrhosis as a diseased growth of the system of the biliary ducts in their finest branches.§ The ducts, coiling themselves into rounded nodules as large as a pin's head or a hemp-seed, become granulations; these in turn become yellow and contain fat; and they are embedded, either alone or in mass, in a spongy, soft, succulent, red vascular tissue. This view of cirrhosis has already been given up by its author. But his description of the naked-eye characters of cirrhosis is masterly, and has formed the foundation of every account of this disease which has since been published. Rokitansky appears also to have been the first who noticed the occurrence of patches of acute yellow atrophy in a cirrhotic liver.

Oppolzer, from observations of his own, came to the belief that the earliest stage of cirrhosis was brought about by a partial obliteration of the portal capillary system.‖ This opinion has been supported by Schuh¶ and more lately by Liebermeister.**

Donders and Jansen have described the microscopical

* Carswell, 'Illustrations of the Elementary Forms of Disease,' London, 1838, art. Atrophy.

† Hallmann, 'De cirrh. hep.' Diss. inaug. Berol. 1839, p. 27.

‡ Gluge, 'Anat. mikr. Untersuchungen zur allgem. u. spez. Path.' Minden, 1839, Heft i. p. 128. Cf. 'Atlas d. p. Anat.' i. 3. & 6. Lief. Lereboullet is stated by Frerichs ('Klinik der Leberkrankheiten,' Bd. ii. p. 21) to hold the same opinions as Gluge; Frerichs gives a reference which I have been unable to verify; but I can find nothing in Lereboullet's paper, as given in 'Arch. gén.' 1852. t. xxxiii. p. 236, which gives colour to such a statement. He speaks of fatty degeneration occurring in general tuberculosis, cancer, and cirrhosis; but lays no stress upon it as the essence of cirrhosis.

§ Rokitansky, 'Handbuch der path. Anat.' Wien, 1842, Bd. iii. p. 341.

‖ Oppolzer, 'Prag. Viertelj.' 1844. Bd. iii. p. 17.

¶ Schuh, 'Zeitschrift d. k.k. Gesellschaft d. Aerzte zu Wien,' 1845. Jahrg. I. Bd. ii. p. 368.

** Liebermeister, 'Beiträge zur path. Anat. u. Klinik d. Leberkrankheiten,' Tübingen, 1864, pp. 42, 44.

appearances of cirrhosis,* repeating most of Hallmann's observations; Backer and Schroeder van der Kolk were the first to inject the vessels of the newly-formed connective tissue, which they found highly vascular, the branches of the portal vein being greatly increased in number, and possessing a serpentine course: there was an abundant network of capillaries in the connective tissue; the bore of these capillaries is stated to be scarcely greater than natural.† This latter statement, however, Beale denies.‡ Frerichs, however, speaks of perfectly new capillary vessels growing up in the new connective tissue, and which could be injected not only from the veins, but also from the arteries.§ Beale seems to be of opinion that the capillaries between the portal and hepatic systems are destroyed, and that the blood passes directly, by means of large vessels, from the portal into the hepatic veins. He states further that the change in cirrhosis begins in the cells at the circumference of the lobule; they deteriorate in structure, because supplied with blood overcharged with deleterious substances, as alcohol.‖ E. Wagner has come to the conclusion that the first change is a fibrous degeneration of the portal capillaries, which become narrowed and lastly destroyed. The hepatic veins and arteries are not affected. These conclusions are founded upon the results of the microscopical examination of twelve livers; but like Beale, Wagner has only made observations upon one injected liver.¶ Beale and Wagner, however, agree in placing the beginning of the disease in the periphery of the acini, and not, as at present generally supposed, in the interlobular connective tissue.

In 1864, Liebermeister brought out a volume of admirable essays upon the pathological anatomy of the liver; and that which refers to cirrhosis** is so important that it will not be further discussed here, but will be referred to below as necessity shall arise. Since 1864, I do not know that any important work upon the histology of cirrhosis has been published.

My own observations were made upon all the cases of cirrhosis of the liver, six in number, which have been examined in the post-mortem room of Saint Bartholomew's Hospital

* Donders en Jansen, 'Nederlandsch Lancet,' 1845, p. 23.
† Backer, 'De struct. hepatis, Diss. inaug. Rheno-Traject,' 1845, p. 78.
‡ Beale, 'Archives of Medicine,' 1857–59, vol. i. p. 121.
§ Frerichs, 'Klinik der Leberkrankheiten,' Braunschweig, 1861, Bd. ii. p. 28.
‖ Beale, op. cit. p. 123.
¶ E. Wagner, 'Arch. d. Heilkunde,' 1862, Bd. iii. pp. 464, 466.
** Liebermeister, 'Beiträge zur path. Anat. u. Klinik der Leberkrankheiten,' Tübingen, 1864, p. 29.

since February last. Parts of the livers were hardened in chromic acid, and after hardening were kept in weak spirit. The sections made were examined in glycerine.

Examining the sections with a low power, it is at once seen that the proper parenchyma of the liver is broken up into islets, separated by broad bands of what looks like a highly nucleated connective tissue. The separation between the new tissue and the liver tissue looks sharply defined, and the two do not appear to pass by degrees into one another. In some cases the liver cells may be found to be filled with globules of fat; but I have not found a fatty infiltration so common as some observers have stated.*

When using higher powers, from 200 to 250 for example, the most striking object in the field is the great abundance of nuclei in the new formed connective tissue. The nuclei vary very much in numbers in different places; here, they may be scattered irregularly, and at long intervals; while there, they may be so thick that they overlap each other, and little else can be distinguished. They vary little in size and shape, being nearly all round or roundish; sometimes a short fibre seems to project from one part of them. They are homogeneous and transparent, clearly defined, without contents or nucleoli, and adhere very firmly to the tissue in which they are imbedded, for they cannot be made to separate from it. The nuclei are not more abundant near the periphery of the acini than in a part equally distant from the margins of two: on the other hand I have more frequently observed them to be most abundant in the very midst of the connective tissue. It is difficult at present to add anything to Liebermeister's description of the general arrangement of these nuclei† (i.) an irregular arrangement, (ii.) a linear arrangement, and (iii.) an arrangement in clusters. The irregular arrangement best explains itself: the nuclei are scattered throughout the fibrous tissue without any orderly distribution perceptible. In the linear arrangement the nuclei often just touch each other or leave a small space between. There may be only one row of nuclei; or two, three, or four. The course of the single row of nuclei is usually parallel with the fibrous tissue. Those with many nuclei in their breadth run in a more complicated way, making sigmoid turns. Liebermeister has shown very clearly that the greater number of these linear arrangements

* Frerichs, op. cit. Bd. ii. p. 25.
† Liebermeister, op. cit. p. 38.

of nuclei arise from pre-existing structures, chiefly vessels. It is also possible that obliterated bile-ducts may now and then give rise to the same appearance.

The clusters of nuclei have nearly always a rounded shape: they are rarely of any length. The nuclei lie thick together, so that they give quite a dark appearance to the cluster. Within them there is sometimes a mass of brown or blackish pigment. Liebermeister favours the opinion that these clusters, also, are remains of vessels. From their position it would seem to me possible that they are sometimes the remains of single acini, destroyed by the increasing connective tissue.

The matrix in which the nuclei are imbedded has most of the characters of ordinary connective tissue. It is fibrous, homogeneous, or granular; the fibres are either so fine that it becomes doubtful if the appearance of fibrillation be not deceptive; or are exceedingly coarse. In most places the fibres have a wavy course, but their general direction is parallel with one another. In other places the fibres make great sigmoid turns; or a fine network; or they appear inextricably tangled. In some places where the fibres do not predominate, single fibres may be seen running amongst the homogeneous tissue and mapping it out into small spaces of irregular polygonal shape. Sometimes the new tissue appears quite homogeneous, only nuclei can be made out in it; and this appearance is best seen amongst the cells at the circumference of the lobules. Sometimes the homogeneous tissue appears dotted, and in the neighbourhood the fibrous tissue also appears dotted. In other places unmistakeable granular degeneration, due most likely to fat, can be seen.

Large openings are frequently seen in the interstitial tissue. When empty, these are most probably sections of vessels. Often they appear filled with nuclei, and in this case it can usually be made out that they are the endings of a row of nuclei, which has been thus cut across. In many cases the openings appear filled with pigment, usually of a yellow-brown colour.

But little attention seems to have been hitherto paid to the changes which the cells undergo. In somewhat thick sections the margins of the cells can with difficulty be made out; but near the periphery of the lobule, in a sufficiently thin section, very satisfactory observations can be made. The cells are greatly altered in both size and shape. They may be diminished to a quarter of their natural size, or become as small as two white blood-corpuscles would be together. This change

in size may be traced, passing from the midst of the lobule to the point where the cells become lost in the growing connective tissue. They are known to be the same cells, because they contain similar nuclei and contents; which contents, however, frequently become paler the farther removed the cell is from the centre of the lobule. The cells also change greatly in shape. They become oblong, spindle-shaped, oval, or egg-shaped. The oblong-shaped cells predominate; and, drawn out from their corners, may occasionally be seen filamentous processes, not unlike the appearance of a unipolar ganglion cell. These processes sometimes inosculate with similar offsets from other cells.

Near the periphery of the lobule the cells have become arranged in layers, one or two cells deep, with nucleated tissue between. The cells are here mostly oblong in shape, while the nuclei are distinctly increased in number. After a careful examination of the margins of the lobules, I have formed the opinion that the number of nuclei is increased very greatly beyond what is natural. Liebermeister, however, holds the contrary opinion.* In some of the cells, though in by no means a large proportion, there exist two nuclei. The nuclei of the liver cells seem to be unaltered in shape or appearance, though in some cases surrounded by fat.

The view of the nature of cirrhosis which receives most support at the present day regards the disease as a chronic inflammation of the liver.† The term chronic inflammation is so vague that it is scarcely worth while to stay to discuss what is meant. It seems to be used by pathologists in much the same sense as the term 'extractive matter' is used by chemists. It will be more profitable to discuss what part the various tissues, which make up the liver, take in the general process of the disease. The generally-received opinion, again, is that the nucleated interlobular tissue is due to a growth of the connective tissue of the liver at large; and this view is supported by Liebermeister.‡ Under the term connective tissue is of course understood the connective tissue within the lobules themselves, and the connective tissue of the blood-vessels, as well as the interlobular connective tissue. By this growth of the connective tissue all the other structures within the liver

* Liebermeister, op. cit. p. 50.

† See the numerous monographs on diseases of the liver, and handbooks of morbid anatomy, English and German.

‡ Liebermeister, op. cit. p. 58.

become compressed and finally destroyed. Thus the vessels can no longer pass blood through the liver, which is the cause of the ascites; and, by a like obliteration of the bile-ducts, jaundice is brought about. The acini forming the proper parenchyma of the liver become compressed, and therefore atrophied, while the liver cells are simply destroyed by the increased pressure without taking any active part in the process. According to this theory, therefore, the liver cells are simply destroyed by the increasing growth of the interlobular connective tissue, and the pressure in this manner brought to bear upon the acini.

My observations have, however, led me to take another view, and to regard it as highly probable that the liver cells themselves help in the general formation of connective tissue. I was especially struck with some appearances met with in a case of hypertrophous cirrhosis. In this case the liver weighed 2,450 grammes; its surface was not indeed quite smooth, but in all other points the appearance was highly characteristic. Here there was marked multiplication of liver cells and nuclei: the margins could be clearly made out; the cells were quadrangular, inclined to be rounded or oval; they were much diminished in size, their diameter sometimes was only twice the size of the nucleus; the nuclei were unaltered in shape or appearance; the cells contained no fat or dark pigment, but only yellow contents, by which they were known to be liver cells. There could be no doubt as to the multiplication of the nuclei. Had the small size of the cells been due to mere atrophy of the parenchyma, the cells would have shown an angular polyhedral appearance, with highly granular and pigmented contents, rather than rounded cells with large nuclei, containing no fat but only ordinary hepatic pigment. In other cases of more advanced cirrhosis, though the multiplication of the cells and nuclei was less obvious, yet these appearances could usually with care be made out. The cells, also, showed greatly altered shapes; mostly oblong, some oval or spindle-shaped and with filamentous tails. These changes from the natural polyhedral shape of the liver cells are very important. After some study of their appearances, it occurred to me that they were liver cells being converted into connective tissue. And this idea is not so utterly impossible as at first sight may appear, when it is remembered that the change of liver cells into connective tissue has already been

observed in the process of repair following certain wounds of the liver. In these cases, Holm has traced the gradual change of the liver cell into connective tissue. The liver cells become infiltrated with fat, their nuclei divide and multiply, their shape becomes oval or spindle-shaped, and lastly, distinct fibres are seen.* These observations have been repeated and confirmed by von Hüttenbrenner; † and in a few experiments on the livers of guinea-pigs and white rats, I was able to follow most of the phænomena. The resemblance between the changes which the liver cells undergo after injury and the appearances that they present in cirrhosis is very close, and cannot fail to suggest the belief that the two processes are most nearly allied. Further observations, especially in cases of hypertrophous cirrhosis, are still necessary before any decided opinion on this point can be determined upon. But whatever that opinion may be, there can be little doubt that the theory of simple atrophy and destruction of the parenchyma from compression will have to be very greatly modified, if not altogether abandoned. In the circumference of the lobules in cirrhosis, there is seen, growing up between the layers of cells, often only one or two deep, a new tissue, usually homogeneous or containing a few nuclei identical with those present in the interlobular tissue. Fibres may also occasionally be detected. It is the growth of this intercellular substance, whatever may be its origin, which causes the diminution in size of the individual acini. As it grows, so do the cells disappear; it penetrates between the rows of cells into the lobule; and it appears to be lost at the periphery of the lobule in the new interlobular connective tissue. It seems highly probable that the nuclei which are found in this intercellular substance are the remains of the nuclei of the liver cells. They are identical in every feature except size, and the only two reasons that Liebermeister can bring against this notion are, that there is no multiplication of the liver cells or their nuclei, and that the liver cells in their

* Holm, Wiener Sitzungsberichte, 1867, Bd. lv. Abth. ii. p. 493. I am aware that these observations have been called in question by Hermann Joseph ('Ueber den Einfluss chemischer und mechanischer Reize auf das Lebergewebe.' Diss. Inaug. Berlin, 1868); and by Koster ('Nederlandsch Archief voor genees- en natuurkunde,' 1868. Derde jaargang, blz. 441); but both these authors are evidently of opinion that the emigrated leucocyte is the only possible source of new connective tissue. Besides, Joseph does not seem to have made his observations with that nicety which the research demanded: e.g. see p. 12 of his dissertation.

† Von Hüttenbrenner, 'Arch. f. micros. Anat.' 1869, Bd. v. p. 367.

neighbourhood are infiltrated with fat. As already stated, my own observations do not coincide in this point with those of Liebermeister; nor can I see that fatty infiltration should be any ground for doubting of this origin of the nuclei, when Holm in his experiment found fatty infiltration to be a very constant precursor of division of the cells. A point of resemblance between the cells of connective tissue and those of the parenchyma of the liver may here be noticed in the readiness with which both undergo fatty infiltration; the loose connective tissue and the cells of the liver seeming to be designed by nature as the storehouses of the hydrocarbons unconsumed in the oxydations of the economy.

Article IX.—*The Degeneracy of the Teeth.* By Alfred Coleman.

TO those practising dental surgery, the following question is of more than daily occurrence: 'Are not the teeth of the present generation much more subject to disease than were the teeth in past generations?' and this question being almost invariably answered in the affirmative, it is naturally followed by another: 'How do you account for the same?' To endeavour to offer some rational replies to the above queries will be the object of the present communication.

First, is the generally received opinion, founded no doubt upon common observation, viz. that the teeth of the present generation are inferior as regards their strength and durability to the teeth in past generations, correct; or is it, as some have suggested, that people in the present day are more thoughtful of them, more frequently consult those occupied in the treatment of their diseases, and hence more is thought of and spoken about them?

We have no hesitation in expressing our conviction that the opinion commonly prevailing is correct. There will not be found, we believe, a dentist of long experience—and many have had ample opportunity of comparing the teeth of three and often of four generations—who has not arrived at this conclusion. The late Mr. Arnold Rogers, formerly Dentist to St. Bartholomew's Hospital, and who for many years carried on a most extensive practice, often expressed to me his conviction of this fact.

Desirous of deciding this question more practically, with others we had in view, some eight years ago, in company with Mr. Cartwright, I paid a visit to Hythe Church, in Kent, in the crypt of which are collected, in a very fair state of preservation, and somewhat carefully arranged, a large amount of human remains.* The history of this collection is obscure. Rumour places it at the period when great battles, or rather slaughters, took place between the contending armies of Danes and Saxons; but for this there is no historical authority. Careful examination would rather lead to the belief that they had been collected from caves or catacombs where they had been deposited for some ages. A fair proportion of them are the remains of young children, and that many of the skulls were those of females is the opinion of Professor Owen. From the different forms, however, that the skulls present, it can scarcely be supposed that they were of individuals belonging to one race. Whatever be the date of their proprietorship, there can be no doubt but that these remains have existed for several centuries. They were quite old enough for the questions we were desirous of determining. Unfortunately, however, for this portion of our enquiry, the skulls, though in a very fair state of preservation, contained in but few cases their proper complement of teeth; many had probably been removed by visitors as relics of this interesting collection; but more had doubtless been purloined by those who, some few years ago, could have turned them to a profitable account. Still it was not difficult to arrive at a pretty correct conclusion as to what the condition of the teeth had been; the perfect state of the vacant alveoli showed how many had been removed after life as compared with the spaces where the alveoli had been absorbed, which were rare. Moreover, it was not unfair to conclude that of the teeth removed as above suggested, carious ones would have been rejected; this was supported by another fact, viz. that in a dry skull carious teeth are more firmly impacted in their sockets, owing to exostosis of their fangs and thickening of their alveoli, than are sound ones. Again, in most cases where caries did exist, it was associated with alveolar abscess, which afforded another element in arriving at a correct conclusion. Two hundred of the skulls, were taken promiscuously, and the condition of the teeth carefully noted; against these a comparison was afterwards made by

* 'Remarks upon the Collection of Skulls in the Crypt of Hythe Church, Kent.' By Samuel Cartwright and Alfred Coleman. Trans. Odontolog. Society, vol. iv.

the examination of the mouths of the same number of healthy individuals; and, making the most liberal allowance for the uncertainty as to the state of the absent teeth in the old skulls, there could be no doubt respecting the fact that they were in their day and generation far less liable to disease than are the teeth of the present generation.

Liability to disease is, however, but one form of degeneracy. There are others, no doubt, such as defective development, as seen especially in the honeycomb teeth, in teeth having a rudimentary form, in the frequent absence of certain teeth, and in their premature loss from absorption of their alveoli; all of which conditions are now no doubt much more common than formerly, but for which the small number of skulls examined afforded too limited data to enable me to arrive at any certain conclusions in respect thereto.

In attempting to exhibit the cause or causes of the degeneracy of the teeth, I feel that I am imposing upon myself a difficult, and, as regards success, a not very hopeful task. Many causes doubtless combine to produce it, which we might safely sum up in the ambiguous expression 'conditions of modern civilisation.'

But we will take some of these conditions, and, examining them by themselves, see how far they bear upon this question.

Few who have much experience in the treatment of diseases of the teeth will deny that a crowded condition is other than favourable for the production of disease, either from actual damage done to the enamel, or by food lodging between them which cannot be readily dislodged: and this condition of crowding most certainly exists to a larger extent amongst the more than amongst the less civilised communities. The form of cranium in the latter is much better adapted for a spacious dental arch than in the former. For the purpose of illustrating this point, a very simple method of comparison may be given. If we examine the well-formed cranium of an European, we shall find that a plummet-line will fall nearly parallel with the forehead, base of the nose, lips and chin; whereas in the cranium of a native of Australia, for instance, a line drawn parallel to the forehead, base of the nose, and upper lip, will form an angle with a line drawn parallel to the lower lip and chin. Now the latter arrangement invariably affords, owing to its projecting alveoli, a more prominent, and consequently more capacious dental arch than when the alveoli are parallel and vertical. In such jaws we find the teeth free from crowding and more in advance, the dentes sapientiæ being in the place where

we find the second molars, sometimes even the first, in crania as they commonly exist at the present day.

As causes for this departure from the uncivilised to the civilised type, two explanations have been offered. In the first* it is referred to a breeding in by selection, and we know that this must have its due effect. Certainly those we deem good-looking, and who are more in accordance with the type indicative of civilisation and refinement, are the most likely to marry and beget children. The best favoured also, as a rule, marry youngest, and therefore generally have the largest families; the least favoured are the least likely to marry, and, when they do so, marry later. Were our notions of the beautiful, as regards our own species, the reverse of what they are, there is little doubt but that prominent teeth and well-developed dental arches would be the rule, and not, as we now find them, the exception.

The second explanation probably more satisfactorily accounts for the causes which have produced an inferior development in the jaws of mankind in the present day.†

During the last few centuries the food of man, and more particularly the mode of its preparation, has undergone a considerable change. Take, for instance, his bread; this, as compared with that of the present day, was imperfectly ground, contained a large portion of the outer husk of the grain, and was baked into a hard mass. It required no small amount of force to bite off a portion, and reduce it to a pulp with the saliva; yet this was readily accomplished by the well-developed jaws and strong teeth of those ages. His meat, cooked almost immediately after the death of the animal, was presented to him in a condition which would sorely tax both the teeth and jaws of the present generation; it was not then the custom to hang meat until upon the eve of putrefaction, or to render it so soft by culinary art that it may be sucked into division, rather than be brought so by lacerating and pounding. But further than this condition of his food, let us remark his manner of devouring it. His meat was torn from the bone by the grasp of the incisors, whilst in many cases probably portions of the bone itself were pulverised under the hard surfaces of the molars. Now by that appliance indispensable in civilised life, the knife and fork, the office of the incisors has become almost a sinecure,

* 'On the Origin of Species by means of Natural Selection.' By C. Darwin.
'Reflections on the Cause and Treatment of some Forms of Irregularity.' By S. Cartwright. Trans. Odontolog. Society, vol. iv.

† 'The Descent of Man.' By C. Darwin.

and the functions of the molars so replaced that we not unfrequently hear the edentulous remark that they can get on pretty well if they give themselves a longer time and cut up their food very fine. It is not, therefore, difficult to comprehend that whilst in an uncivilised state the jaws, by means of very active employment, were well-developed, they should become, after ages of imperfect use, ill-developed, and thus cause a crowding and pressing together of the teeth which though imperfect in many respects, do not appear from observation to have suffered a commensurate loss in size.

These two conditions of which we have spoken, viz. a breeding in by selection, and an imperfect development of the maxillæ, or, at all events, of their alveolar portions due to imperfect use, have been named as the causes which, in the present day, produce a crowding of the teeth so detrimental to their durability. But I do not hesitate to assert my belief that one great cause, if not the greatest, for the teeth of the present day having degenerated, is also to be attributed to the latter condition, viz. imperfect employment. Organs or structures not properly called into use do, we all know, undergo some form of degeneration, and it is only fair to conclude that the teeth follow the same law. Moreover, observation teaches us that the teeth as they become worn become harder in texture. If we take teeth which have lost their enamel—their densest covering—by wear we shall find the exposed dentine usually so hard that it can scarcely be scratched by the sharp edge of the best tempered steel instrument. In such case a section placed under the microscope will show the contents of the dentinal tubuli to have received lime salts, and the whole to be an almost homogeneous solid mass. As evidence of what we have just stated, we may advance a fact which is well known to those who have carefully watched the habits of domestic animals. If we take two dogs, and feed the one upon soft food, such as in-door pet dogs are usually fed upon, and the other animal upon hard food and bones (the fare of out-door dogs), we shall find, after some years, that the teeth of the former are black, eroded, and nearly level with the gums; whilst in the latter they will be white, hard, and, excepting some evidence of wear, nearly perfect.

In employing food unnaturally soft, the gums lose a stimulus for healthy circulation; they become congested, soft, and spongy; the result of this hyperæmic condition is absorption of the alveoli, and consequently premature loss of the teeth. Independently of the condition of the gums, the teeth require

a certain amount of antagonistic pressure to enable them to retain their proper position in the jaws. A tooth having no antagonist to meet it, becomes gradually protruded from its socket until it drops out; and teeth which are not subjected to pressure, through the continued use of soft and unnatural food, must suffer, though not perhaps in the same degree.

To crowding and disease, as causes for the degeneracy of the teeth in the present day, might be added, no doubt, many others,—every habit, in fact, which has a tendency to lower the standard of health—and perhaps none other is greater than that strain upon the nervous system which is everywhere seen and felt—but believing the two first we have had under consideration to be the chief, we will not venture to expatiate upon any other. We may, perhaps, here anticipate a very natural objection to our arguments, viz. that whilst the conditions unfavourable to the teeth, upon which we have laid so much stress, have been in existence for some centuries, the great degeneracy of the teeth has taken place in one, or even perhaps less than one century. This, we admit, is an objection; but we would remind those to whom it may occur, that our change of habits and customs in the last fifty years has probably been greater than occurred in, at least, two centuries previously. Should our progression or change be in the same proportion during the next half-century, and should the degeneracy of the teeth follow at the same ratio, I fear there is a great chance of man becoming as Mr. Darwin anticipates for him—an edentulous being.

With such a prospect before us, what, it will be asked, is the best to be done? Must we allow the natural course of events to roll on without any effort to counteract them, trusting that man will accommodate himself to the circumstances of his case as they arise? or can we suggest any means for counteracting the evil, short of returning to those conditions of life which would now be designated barbarous? In the hope that we may do something in the latter direction, we will offer a few practical suggestions, all of which have been tried, and where persevered in, have been attended with at least some success.

As we mentioned over-crowding in the first place as one of the causes of early loss of the teeth, we will commence by stating what experience has proved to be best under such conditions. Here we have to deal with undue proportions between the jaws and the teeth, the latter being in excess. As we can do very little, if anything, in the way of expanding the jaws—and indeed if we could, the result would not, as regards personal

appearance, be gratifying—we must lessen the number of teeth. In so doing we may lay it down as a general rule, that if there be any amongst them that are decayed beyond the certainty of their being preserved for many years, these should be selected for removal. Should they, however, be sound, we must be guided by the admirable tables of the relative frequency of different teeth to decay, drawn up some years ago by Mr. Tomes;* and as these tables inform us that of all the teeth the first permanent molars are the most liable to disease, we ought, should no other condition counter-indicate it, to sacrifice these. I daily meet with cases where the early removal of these teeth has been attended with the most beneficial results.

Having spoken of food, we may offer a suggestion or two upon this subject. Bread made of whole meal flour (now to be obtained of many millers), besides being undoubtedly more nutritious than that we commonly eat, would give our teeth much more exercise and our gums a more healthy stimulus. Some American physicians have laid great stress upon this point, believing the chief cause of the degeneracy of the teeth to be due to our rejecting the bran portions of the wheat, thereby depriving the system of its supply of phosphates. The difficulty which will beset us in this reform will be on the part of our domestics, who will believe that a principle of economy is disguised under it. The gain would be still greater, could we get such bread prepared at home. The latter, sweet and pleasant to eat on the fourth or fifth day after it is made, must be more nutritious than that which is dry and sour on the third day. The explanation why the latter should be so is not difficult; bread made at home from flour purchased wholesale costs quite as much per lb. (not including the cost of labour) as does the bread commonly supplied by our bakers. I would lay great stress upon the necessity of our having this staple article of our diet pure and nutritious. Some years ago I made a series of experiments, in order to determine what portions of our food acted most injuriously when left in contact with carious teeth, placed as nearly as possible in the same condition as in the mouth. To my surprise bread was found the greatest offender.†

With regard to sweet things as articles of diet, these in excess are no doubt injurious, chiefly, I believe, by impairing

* 'Lectures on Dental Surgery and Pathology.' By John Tomes.

† 'On the Nature of Dental Caries.' By A. Coleman. Trans. Odontolog. Society, vol. iii.

the digestive processes, and not directly by their action on the teeth; but in moderation wholesome sweets are not injurious. Vegetable acids in quantity are decidedly hurtful; and I may venture to remind medical practitioners that certain medicines they often prescribe inflict more injury upon the teeth than they are commonly aware of. The worst results I have witnessed have been from the long-continued use of Tinct. ferri perchloridi. It is of but little service taking the same through a tube if it must be given, and it is a very valuable tonic; it is better to allow the patient, after taking it, to rinse the mouth well with a strong solution of potassæ or sodæ bicarb. Sulphuric acid is the least hurtful of any acids much employed in medicine, from the well-known fact that the sulphate of lime is insoluble in the acid. When, therefore, there is but little choice necessary in the kind of acid to be employed, let it be this. With regard to meat, I have little to say. Some attribute the early loss of the teeth to our eating too much animal food; but were this the case, surely the poor Esquimaux ought to suffer, whereas he has probably the finest teeth of any nation under the sun. For our children, let me ask this little indulgence, viz. that they be, during the years of their nurseryhood, supplied, to the largest possible extent, with bones on which to exercise their teeth and gums. A child's universal liking for a bone to suck and gnaw must be some strong dictate of nature, and the freedom of a bone from anything but bone, after it has been in a child's possession, proves that nature most successfully fulfils her own dictate. Moreover, as we eat the flesh of young animals, much of the developing portions of the bones, so sucked, becomes, if required, assimilated. I have spoken of the knife and fork, and I believe it has much to answer for; or, perhaps, rather the civilisation which introduced it, and holds it too dear to ever think of giving it up. But the same civilisation has, to some extent, atoned by the introduction of the tooth-brush. A thorough use of the latter will, I believe, counteract all the evil of the former; but there are few amongst us who use it in anything like the way it ought to be used. We should do well to employ it after every meal. We have, or ought to have (few of us have) thirty-two teeth; half a minute for each tooth would not be too much; and, by using various forms of brush, not a particle of food should be left remaining in the mouth. It is not the mere cleansing that will do good; the very friction will harden the teeth and preserve the gums in a healthy condition. Two questions are commonly asked me upon this subject of cleaning

the teeth. 1. Is it bad to use tooth-powder?—I reply, a piece of steel can be kept highly polished, if constantly rubbed with soft leather; but, if this be neglected, some coarse material must be employed to render it bright again; so the teeth, if sufficiently brushed with water, will need no tooth-powder. 2. How early should children have their teeth brushed?—I reply, as soon as they have any. The trivial matters I have introduced in treating upon the subject of degeneracy of the teeth may not improbably be regarded as lowering to the dignity of the Reports of St. Bartholomew's Hospital. The daily amount of suffering that I witness, and the hope that I may do good in calling attention to the subject, is the excuse I offer to its readers.

Article X.—*Singular Injury of Cranium by a Marble.*

By J. F. Nicholson.

December 20, 1862.—I was called to a little boy, aged five, who had (whilst stooping to pick up a marble with which he was playing) fallen down a staircase and wounded his left temple. He had fallen several feet, his mother said; the stairs were of wood, and led from the bed-chamber of the small cottage into the back kitchen. No inequality or rough surface could be discovered on the stairs. His mother was alone with him, and picked him up. The wound bled profusely, in a jet; she bound it up, but, as the hæmorrhage continued, I was sent for. The boy, though stunned at first, was on my arrival quite conscious: only faint. I found him sitting up in a chair, with his head supported on a pillow, and blood still flowing. The wound was jagged and valvular, about an inch long on the left temple, close to the hair. Arterial blood kept welling up and overflowing, but not jetting; compression of the temporal artery below controlled, but did not quite stop it. On drawing down the scalp, I felt a rough irregular edge, and could plainly pass my finger's point into a hole in the skull, but discovered no loose portion of bone. There was considerable hæmorrhage, and the boy, although perfectly conscious, was very faint; so I closed the wound with a compress of lint and bandage, and was pleased to leave him with the bleeding stopped. I could not satisfy myself what caused the injury. In the evening I was sent for, as he was very

sick, and every time he vomited blood burst out under the bandage. Cold was applied, and two grains of calomel and a saline mixture given every four hours. Headache, fever, dry hot skin, pulse above 120, confined bowels, were the prominent symptoms.

December 23.—I loosened the bandages, and left the lint only adherent to the wound. It became offensive, and was carefully removed. Profuse suppuration filled the wound, and could be distinctly seen to have a pulsation synchronous with the pulse. A poultice was applied twice a day, and the edges of the wound soon assumed a healthy appearance. On drawing down the scalp, the bone was seen white and bare, with a well-defined hole in it. The head symptoms had disappeared, so I would not probe it to gratify my curiosity to know the extent of the mischief. He took one grain of iodide of potassium three times a day, an aperient when necessary; beef tea and farinaceous food and lemonade. He kept steadily improving up to January 12, being cheerful and amusing himself with his playthings in bed, always resting his head on the pillow. There was no swelling about the wound, nor marked difference in size from the opposite temple. Fungous granulations kept closing the wound, while the pulsation of the discharge at the bottom, although not so strongly marked as at first, was always observed.

January 12.—He complained of headache and fever. On the 13th I was sent for, my visits having been only occasional for the previous week. His bowels had not acted, and two grains of calomel were given.

14th.—No better. The whole temple and side of the face and neck were swollen, red and painful, as if an abscess were forming. I suspected bone was exfoliating. It was so excessively tender that he screamed when it was touched. There was, about an inch below the wound, a prominent roundness, as if matter were pointing. An opiate was ordered, and I determined the following morning, under chloroform, to examine the wound carefully, believing there was a sequestrum of dead bone that might be removed.

15th.—After a very restless night—with great headache, shivering, fever, vomiting, confined bowels, with excessive sensibility of the whole head and face, which was swollen, erysipelatous, and shining red, with the appearance of matter pointing just below the wound—chloroform was administered by Mr. Stokes, house-surgeon of the Stratford Dispensary. With a probe I could now distinctly feel a solid body, move-

able, and imbedded under the scalp; with a pair of forceps I succeeded after some difficulty in seizing it, and, after considerable traction, drew out, to my surprise, not a piece of bone, but a large marble. There was but little hæmorrhage, and I could feel a large extent of pure rough bone; but whilst making the examination, consciousness returned, and he screamed out, so that I desisted from further investigation, feeling sure the cause of worry was removed, as well as now explained. He soon recovered, vomited only two or three times; two grains of calomel were given as well as saline mixture and iodide of potassium. 8 p.m. Mr. Stokes reports, "He passed a quiet day, is now asleep, and seems going on very well."

16th.—Pulse above 120; erysipelatous swelling and tenderness of scalp; no vomiting; costive, restless, headache.

17th.—The back of the head is now swollen and painful; eyelids tumid, forehead not so red; pulse 112, feeble; skin moist, fever declining; has taken only milk; great headache; poultice applied; a little wine and water twice a day.

27th.—Steadily improving. I have removed two pieces of bone; and there is a larger portion necrosed, but not loose enough for extraction. There is a distinct depression in the spot whence the marble was removed, and evidently no bone here, as there is no resistance to the finger but a soft flaccid tissue. The wound freely suppurates, and the arterial pulsations can be counted in a continuous uniform ebb and flow. He is only weak, and takes decoction of bark and dilute nitric acid.

Feb. 1.—I removed two more pieces of bone. He is running about cheerful.

March 14.—The wound has been healed a fortnight. There is a marked dimple or depression, and the bone is clearly deficient, as if a piece the size of a farthing had been trephined. He seems well, but is restless and dreams at night.

1866. Feb. 21.—There still remains the deficiency of bone. The brain arteries pulsate visibly, and the edges of the bony margin can be felt rounded off; the centre filled up only with soft elastic tissue.

1867. No alteration. No growth of bone.

1872. August—Still the same.

The weight of the marble was 1½ drachm.

Remarks.

This case is interesting, *first*, from the cause of the injury—a marble penetrating the cranium, simply by the weight of a child only five years of age being suddenly thrown upon it from the height of a few stairs. This seems scarcely credible, and I was at first inclined to think that the mother had invented this tale to screen some cruel act, and that she had perhaps struck the boy with a semi-blunt instrument in a fit of passion, with intent either to injure or destroy life. The character of the mother in the present instance, however, negatived the idea. Had the accident occurred in some badly-conducted family, where blows and threats and curses are so common, the only person in the house might have been subjected to suspicion, which might have brought her, although innocent, into serious difficulties, and perhaps exposed her to trial for a criminal misdemeanour.

Secondly, there was a want of evidence to show how the accident occurred. The boy could give no clear account. All he knew was, that he was playing with a marble and attempting to pick it up, when he fell down-stairs. His mother now supplies the remaining portion, viz. that she lifted him up, stunned and faint from loss of blood.

Thirdly, 23 days elapsed before decided indications of serious brain mischief appeared. This fact seemed to shut out the idea that a foreign body could be lodged so long beneath the cranium, either in the substance of the brain or resting on its membranes, without sooner producing positive and most alarming signs of its presence. The symptoms observed on the 12th of January were believed to arise from spiculæ of necrosed bone, causing meningeal irritation, and giving warning that the time had arrived for surgical interference. Chloroform was necessary owing to the excessive sensibility of the patient; and the extraction of the offending foreign body at once cleared up all the obscurity of the case. All danger was at an end. The edges of the gouged hole in the cranium threw off the rough dead margin; no fresh bone formed to fill up the deficiency, even at this early age; only soft elastic tissue, after ten years' active growth, still supplies its place. The non-development of bone in these situations has been long observed and taught by those intrepid yet less conservative surgeons of by-gone ages when trephining operations were almost everyday occurrences in hospital practice.

Article XI. — *Tubercular Disease of the Urinary Mucous Membrane.*—By Thomas Smith.

I AM not aware of the existence of any specific description of the symptoms and history of this disease, as it may be observed during life. In this paper is collected such information as I have gained by personal observation and by conversation with those of larger experience than myself.

In Dr. West's book on the diseases of women is, so far as I know, the best account of urinary tuberculosis as it occurs in the female sex—an account which is well summed up in the following words:* 'Inflammation of the kidneys and bladder may occur as secondary to tubercular deposit, when, as yet, no other symptom of tuberculosis is present; and such a disease may run its course to a fatal issue without phthisis supervening, or even without any deposit of tubercle in the lungs, or elsewhere than in the diseased organs and absorbent glands in their immediate vicinity.'

Vogel, in his book on the diseases of children, just mentions the disease, saying that it usually begins in the testicle, and extends to the mucous membrane of the urethra,† bladder, and kidneys. Rilliet and Barthez‡ mention a case, and M. Pasquet says that he has seen the disease on the mucous membrane of the bladder.

Though most are familiar with the pathological appearances of urinary tuberculosis, yet I have not met with a good account of the same in English, except in Rindfleisch's book, under the name of Phthisis Renalis.§ I therefore venture to state that this paper refers to a disease which is often called strumous or scrofulous disease of the urinary mucous membrane, and which commences as a tuberculous infiltration of the submucous tissue of some part of the genito-urinary mucous membrane (probably most often first in the kidney). To the naked eye it first appears as a yellowish cheesy deposit, though, in its earliest stage, it is stated to be a deposit of grey or miliary tubercle; later on in the disease it is often associated with tubercle of the

* 2nd edition, p. 183.

† In this I venture to think he is in error.

‡ Vol. iii. p. 461. In one case that I have seen, the vesical orifice of the ureter was obstructed.

§ Rindfleisch, Kloman, and Miles's translation, p. 569. Also 'Handbuch der patholog. Anat.' Dr. E. Klebs, p. 632. See also Virchow, 'Die krankh. Geschw.' Band ii. pp. 651–55.

substance of the testis, the body of the penis or the prostate. It mostly affects those who possess what is conventionally termed the tubercular diathesis, and it usually occurs before the middle period of life. When the disease has run a long course, the following appearances may be generally observed.

The internal surface of the urethra, bladder, and ureters, is seen either in patches or universally covered with a yellowish deposit, in consistence like soft cheese or putty, often mixed with phosphatic grits: this deposit adheres closely to the mucous membrane, which latter, on examination, will be found roughened, eaten into, or here and there ulcerated through; the submucous tissue is thickened and stiff, and infiltrated with deposit.

The ureters generally appear externally thick, hard, stiffened, and shortened; internally they may have here and there a deposit of tuberculous matter in their walls, or the whole substance of the wall may be full of deposit, either partially obstructing the canal, or, if ulceration has taken place, this latter may be much enlarged: the mucous surface may be plastered over with the putty-like deposit, and here and there ulcerated. In one case that I examined the vesical orifice of the ureter was obstructed.

The kidneys, where the disease has made much progress, will be more or less excavated; the loss of substance having taken place from the cavity of the pelvis and calices towards the outside of the kidney; the same kind of deposit being smeared over the interior of the pelvis, the calices, and the ulcerated cavities in the glandular structure. So much of the latter as remained contained isolated deposits of tubercle, in one case that I have examined. Specimens of this disease are to be found in most pathological museums. I would refer especially to drawings 282, 283, 128, in St. Bartholomew's Hospital Museum; and Nos. 29, 30, 31, 33, Series xi., in St. George's Hospital Museum.

Of this disease Rokitansky remarks that it is generally secondary to tuberculosis of the prostate or genital organs—an opinion that is not supported by the symptoms of the disease during life. Dr. Wilks,* on the other hand, says of tuberculous disease of the bladder, that it is secondary to more deep-seated disease in the abdomen, and does not occur as a primary disorder. That generally the kidney has been long affected, and that, in the course of years, the disease creeps down the ureter to the neck of the bladder. This view is most fully borne

* 'Path. Soc. Transactions,' vol. xi. p. 138.

out by the course of the symptoms during life, the earlier of which always point to trouble in the kidneys, the later to disease about the bladder and adjacent parts.

Dr. Burdon Sanderson, in illustration of the part that irritation may play in the causation of tubercle, remarks, 'In the cases in which tuberculous processes originate from catarrhal inflammation of the genito-urinary organs,' gonorrhœa leads to prostatitis, prostatitis to scrofulous catarrh of the bladder, which creeps upward along one or both ureters, and produces induration and caseation of one kidney—that condition which is called renal phthisis. In this instance . . . . a tuberculosis begins from a simple catarrh of irritative origin.*

I gather from the context that Dr. Sanderson does not consider this to be the most common origin and course of urinary tuberculosis, though it may be that it is a more frequent source of the disease than I suppose.

The pathological appearances support the view that the disease begins above and spreads downwards; for the kidneys are generally in a more advanced stage of disease than the ureters, and the ureters more diseased than the bladder.

Symptoms.—Patients suffering with this malady are sure, some time in the course of the disease, to fall under the suspicion of being the subjects of stone; indeed, it would be true of almost all to say that the early symptoms much resemble those of renal calculus, the later those of stone in the bladder.

In the earliest stage of the disease the symptoms may be such as excite but little attention, and for which medical advice is not generally sought; being, perhaps, a slight aching in the back, a little blood in the urine, a transient pain in the testicle or glans penis. By degrees the bleeding becomes more copious, the pain in the back more severe, and symptoms of urinary irritation appear, in an increased frequency of micturition, in pain in the glans penis, in the bladder, or in the perineum.

In children there may be, before passing water, shrieking, shuddering, and pulling the foreskin and pinching the glans penis, the child sometimes finding a temporary relief after the water has passed. In the later stages of the disease the pain in the bladder and the urinary distress is most severe, and there is tenderness in the hypogastrium.

The urine, which from the first is usually alkaline, may contain nothing abnormal but blood and broken down epithelial scales. After a time it comes to be loaded with pus, and to be

* 'Recent Researches on Artificial Tuberculosis.' Edinburgh, 1869.

offensive. I have observed that the quality of the urine is liable to great variations; that it may at one time be full of blood, at another free from it; that the pus may disappear, and again reappear.

Abscesses may form in the loins,* prostate, vesiculæ, perineum, body of the penis or testicle; and these are preceded in the last-named organs by deposits of tuberculous matter, which may be recognised as indurations or lumps some time before the formation of matter.

Urinary abscess or extravasation is not rarely the result of these suppurations.

In a case (a boy) under Mr. Wormald's care, in addition to very severe urinary symptoms, phosphatic deposits could be detected with a sound, on the mucous membrane of the bladder.

The blood in the urine may be bright-coloured, as from the bladder, or coffee-coloured, as in stone in the kidney, it may be largely increased in quantity by exertion or shaking jarring movements of the body. As before mentioned, in some stages of the complaint, the subjective symptoms are identical with those of stone; in no case, therefore, where tuberculosis is suspected, can the diagnosis of the disease be confirmed until the non-existence of stone in the bladder be ascertained by physical examination, and until, by watching the progress of events, the existence of renal calculus is negatived.

Above are described, as I believe, the most marked features of a severe and typical case of urinary tuberculosis; and here is an account of the disease as it occurred in the person of a middle-aged adult, who was for a time under my care in the Hospital, and an account of whose case has been kindly furnished me by Mr. Hawker Soper, of Blaina.

J. J., æt. 35, an iron-worker in Wales, began to complain in March 1868 of pain in the back. In a few months there was much irritability of the bladder, and in April 1869 he was obliged to pass water almost every hour. At this time the urine was frequently bloody, and especially so after any exertion. Towards the end of 1869 pain commenced in the perineum, and, to use his own words, 'at the bottom of the bladder,' followed by pain in the penis, and most acute pain in the glans, especially just at the moment the bladder was being emptied. The tenderness in the perineum was so great that he could not sit. At this time the urine was bloody, purulent, and full of mucus. He came to St. Bartholomew's, where I

* 'Path. Soc. Transactions,' vol. xvi. p. 180.

sounded him, as Mr. Soper had done, with negative result. After his return to Wales there was no large quantity of blood in the urine; occasional streaks were seen in the ropy mucus, and sometimes about a drachm of clear blood followed the passing of mucus. There was occasional pain in the testicle, but it was not a marked feature in the case. He complained most of acute pain in the perineum, referred to a spot immediately behind the scrotum; of inability to retain his water longer than half-an-hour, and of constant pain in the back; this, however, which was confined to the left side, was not so intense as the pain in the bladder. He died in May 1871, his symptoms having lasted more than three years.

Post-mortem examination.—The left kidney was dilated into a large bag containing turbid serum with flakes of yellow lymph floating in it. On section the glandular structure had almost disappeared, with the exception of two mammillary processes, which were filled with cheesy tuberculous matter.

The left ureter was converted into a kind of stick of yellow cheesy matter, and somewhat exceeded half an inch in diameter in its whole length.

The bladder was thickened and contracted; the whole surface of the mucous membrane was softened and studded with yellow cheesy deposits; there was some slight ulceration near the neck.

The prostate presented a similar appearance to that part of the secreting structure of the kidney that remained; each lobe and lobule could be traced out, filled with a deposit resembling softening tubercle. No further examination was permitted. The right kidney and ureter were healthy.

Urinary tuberculosis is very variable in duration; it is sometimes very chronic, and is liable to remissions in severity and to exacerbations; it may even be completely recovered from: indeed it seems in its progress and termination to be liable to much the same irregularities as pulmonary phthisis. The case just related lasted over three years. The following case was under observation many years, and might be styled a case of *chronic urinary tuberculosis.* I am indebted to Mr. Warrington Haward, under whose care the patient was, for the particulars of her case.

Mrs. J. A., æt. 40, married thirteen years, has had six children, of whom two died as infants; one, the youngest, has had two scrofulous abcesses; the other three are healthy. Father living; a brother and sister have died of phthisis. Mother died of cholera.

Eighteen years ago, after close attendance on a sick relative, she began to be ailing, and a year later began to suffer pain in the renal region, and tenderness, and to pass gravel. These troubles lasted on and off for two years. She then was attacked by bronchocele, was treated and cured. Soon after this the pain in the loins returned with hæmaturia. Under treatment after two years the symptoms disappeared, and she remained well until 1861, when her last child was born. She had a favourable confinement, but soon after she began to suffer from frequent calls to make water, with pain in passing it and smoky urine. For the next eighteen months her symptoms increased in severity in spite of treatment. The urine contained both blood and mucus. During this period she was sounded on three occasions for stone. In 1864 she was attacked with violent pain and spasm in the bladder, which was relieved by treatment. Dr. Robert Lee examined her and pronounced the uterine system healthy, but found extreme tenderness on pressure on the posterior wall of the bladder. The urine was at this time natural. In the October of this year she had frequent attacks of difficulty in passing water, and spasm of the bladder. In November she passed a considerable quantity of blood, with relief to the pain. At this time she was examined by Dr. Bence Jones and Mr. Cæsar Hawkins, whose opinion was that the patient was suffering from scrofulous disease of the bladder. There was marked dulness over the apex of one lung. The urine after this became alkaline, and contained triple phosphates and mucus. After three months the symptoms improved, and she could hold her water for three hours at a time.

During 1865–66 she had recurrence of pain and bleeding about every two months; occasionally having retention from blood-clots stopping the way.

During 1867 she gained flesh and suffered less with her bladder. At this time she had a moderately severe attack of scarlatina; and this was followed for six months by a great amelioration in the bladder symptoms; at the end of this year the pain and bleeding again attacked her.

In 1868 she was attacked with cancer of the breast and axillary glands, which spread to the skin in the neighbourhood. Three months before her death rapid softening of the deposit in the lung set in, and she died in December 1869. No post-mortem was permitted.

I cannot doubt that, as occasionally happens in pulmonary tuberculosis, complete recovery may take place from the same disease occurring in the urinary organs. I believe that I have

witnessed it in children, and Sir James Paget has kindly informed me of two cases that have recovered under his observation. In one instance a patient about twenty years of age suffered from tubercular disease of the bladder and prostate with perineal abscess, and is now, twenty years afterwards, alive and well, with his abscesses healed.

The following is an illustration of the disease as it may occur in childhoood—*acute urinary tuberculosis.*

William Smith, aged four-and-a-half years, was admitted into the Children's Hospital, February 8, 1868, under Dr. West's care. He was a workhouse orphan, farmed out to nurse. His foster-mother stated that two months ago he began to pass blood with his water. On admission he was suffering from prolapsus ani and severe urinary irritation, passing his water frequently, screaming and shuddering before passing it, and being somewhat relieved when he had passed it; he does not pull his penis. The urine contained pus and red blood. He was sounded for stone, no stone being detected. He was well nourished, though a delicate-looking child, with silky hair and large eyes.

February 14.—Under chloroform he was examined, and a round firm swelling could be felt, just below the right kidney. It seemed about the size of a large filbert, and was at first thought to be a renal calculus. He was ordered various remedies to arrest the bleeding, which still continued, and sedatives to diminish the urinary irritation, with but little good result.

February 17.—Began to put his hand to his back and complain of pain which, by degrees, became constant; there was no renal colic. For a few days, when taking dilute phosphoric acid, the urine was quite free from blood; the swelling in the abdomen could be felt without chloroform; it seemed painless to pressure.

March 2.—The bleeding returned, the pain in making water continued, with increased frequency in passing it. On March 13 a small tumour was felt either in or below the left kidney, and the true nature of the case was then suspected. About this time he began to pull the foreskin and pinch the glans penis, just as a boy with stone; the pain increased in severity, he was attacked with vomiting, had convulsions, and died April 2, nearly two months after his admission.

Post-mortem examination. Bladder.—Mucous membrane highly vascular and rough about the orifice of the left ureter; the membrane was villous and blood-stained. There was no deposit visible to the naked eye either in or beneath the mucous membrane.

Ureters.—The right was much thickened in its coats and shortened; its upper end was much enlarged by a deposit of tuberculous matter in its walls, forming, as was believed, the swelling felt during life; the canal of the ureter was of natural dimensions.

Left ureter was very greatly dilated, and its walls thinned; its coats seemed healthy. The condition of this ureter seemed due to the obstruction at its vesical orifice, caused by the condition of the mucous membrane of the bladder at that point.

Kidneys.—Right. The mucous membrane of the pelvis and calices was smeared over with yellow tuberculous matter, and was here and there eroded; the glandular texture was in parts invaded by ulceration extending from the cavity of the pelvis. There was a cyst in one part of the kidney containing flaky pus; here and there, in the cortical substance, were circumscribed deposits of softening tubercle.

The left kidney was in a much less advanced stage of the same disease. In the glandular substance there were a few scattered yellow deposits; the mesenteric glands were enlarged and hard. The liver, heart, spleen, lungs and brain, were healthy.

It is worth observing the resemblance that the disease bore in this patient, first to renal and then to vesical calculus.

The following case was furnished me by Mr. Warrington Haward by the kind permission of Mr. Prescott Hewett, under whose care the patient was:—

John Wilson, æt. 14, was admitted into St. George's Hospital, March 6, 1872. He was a moderately healthy-looking pallid boy, with a healthy family history. For the last ten months has had occasional hæmaturia; the urine has become thick, and has needed to be passed more frequently; for some time he has had occasional pain in the bladder; during the last three months it has become worse. He describes it as in the bladder itself, and it occurs both before and after micturition. He has never passed any gravel; has no lung symptoms. On admission the urine was found to contain a large quantity of pus and granular matter and broken up epithelium, no blood; it was alkaline and very offensive.

He was sounded for stone; no stone found.

March 15th.—He passed several small clots of blood. He was put on cod-liver oil.

During April the hæmaturia was nearly constant, the pain rather less. In May the hæmaturia increased. In June there was very much less blood, but still much pus and granu-

lar matter in the urine. The pain was decidedly better. He was discharged in July.

Though the diagnosis in the above case has not been confirmed by a post-mortem examination, yet I cannot doubt that Mr. Hewett is right in regarding the symptoms as indicating strumous disease of the urinary mucous membrane. Such as would question the nature of the disease I would ask, what interpretation they would put on the same train of symptoms occurring in connection with the pulmonary system, and whether one might not reasonably conclude that a boy of fourteen was suffering from phthisis who, during several months, suffered from frequent attacks of hæmoptysis, and spat up pus in large quantities.

And here I would venture to call attention to the resemblance —not altogether fanciful, I believe—between tubercular disease of the urinary and pulmonary mucous membranes. Among the most common indications of pulmonary tubercle are suppuration, hæmoptysis, an increased secretion of mucus, with the occasional recurrence of a spasmodic expulsive muscular effort (in the form of cough).

In urinary tuberculosis there is also suppuration, hæmaturia, an increased secretion of mucus, with spasmodic expulsive contractions of the bladder.

The patient to which the following case refers was under my care in St. Bartholomew's:—

E. B., æt. 29, was admitted under suspicion of stone on June 25th, 1872. Is married; his family history is healthy, but he is thin, and looks very delicate. Has had strumous abscesses over the sternum, which discharged for two years; also a strumous abscess on left upper arm, the scars of which are visible. Has suffered a good deal from cough, and has had one attack of pleurisy; has been losing flesh for the last three years. Eight months ago began to have pain in the glans penis after micturition, and soon afterwards his testicles became swollen without apparent cause; soon after the appearance of the pain in the glans he began to pass a little bright-coloured blood after micturition; the stream of urine would suddenly be arrested, then blood would flow: he had frequent calls to make water, and used to have to get up seven or eight times of a night. He has had three severe attacks of pain in the left loin, each lasting about a day and followed by profuse hæmaturia, the blood being generally of a bright colour; lately the bleeding has become less frequent, and there is no blood now in the urine since passing a large quantity of black blood ten days ago.

The bleeding has always been increased by exertion or movement. At the present time there is very little difficulty in passing water; he has a twinge of pain in the glans penis after emptying his bladder. The urine is now acid and albuminous; it has lately been bloody and full of mucus. He has an induration in the left testicle; at one part the testicle has recently been the seat of an abscess; it is still discharging; in the right testicle there is a small nodular swelling. The prostate feels here and there indurated. The vesiculæ seminales are very distinct to the touch; they feel hard and prominent from the rectum; there is some fulness perceptible over the left kidney. He has never passed any gravel, and no stone can be detected in his bladder.

He was advised to take steel and cod-liver oil, and to return to the country, where he resided.

Dr. Moody of Grimsby, has kindly given me a further account of this case as follows:—

August 25th.—E. B. has been very much better lately, and has been able to attend to his business; he still feels slight pain at the end of his penis, in his loin, and over the region of the bladder. His urine is natural in appearance; there is neither blood nor mucus to be seen; he sometimes has a little difficulty in passing it, for which he uses a gum elastic catheter. He is taking tincture of steel and cod-liver oil.

Notwithstanding the improved condition of this patient as reported by Dr. Moody, I cannot doubt that he has tubercular disease of some part, and not a small part, of his urinary mucous membrane. The amelioration in his symptoms is just analogous to what is observed, not rarely, in pulmonary phthisis.

For many of the particulars in the following case I am indebted to Mr. Blasson, under whose care the patient is:—

J. A. D., æt. 2 years and 6 months, a little girl, was born in India. No history of phthisis in parents; is very delicate-looking and pallid; her urine has never been natural, and ever since she was six months old her urine has been fœtid and dark-colored (probably from blood). She is troubled by frequent desire to pass her water; it now contains (August 21st, 1872,) triple phosphate, mucus, pus and blood; it is very offensive and alkaline; the blood varies much in quantity, is sometimes coffee-coloured and sometimes separates from the urine as bright-coloured blood; the urine varies both in quantity and quality. She has no pain or difficulty in passing it, and is not disturbed in the night, though micturition is

frequent during the day. I sounded her without discovering any stone, nor has she passed gravel at any time. Mr. Blasson had lately been giving her nitro-hydrochloric acid, under which the quality of her urine had improved.

Though this child has at present no pain or difficulty in micturition, and no pain or tenderness over the bladder, yet I have little doubt she has tuberculosis of some part of her urinary system, probably of her kidneys; and those who may think otherwise I would again refer to the interpretation they would put on similar symptoms in a child occurring in connection with the pulmonary system.

Treatment.—From the urgency and painful nature of the symptoms of this disease, it is obvious that these must be treated as they arise, though it is necessary and beneficial to use constitutional remedies.

I believe opium or morphia to be most useful for the relief of pain; astringent preparations of iron and confection of black pepper* to be most efficacious in controlling the bleeding; and cod-liver oil and iron to be the best as constitutional remedies.

Article XII.—*Simultaneous Dislocation of both Femora; Reduction by Manipulation.* By William Pollard.

JOSEPH ROWLEY, æt. 53 years, was admitted into the Torbay Infirmary, Torquay, on the 3rd of May, 1872, in company with three other men who had each received severe compound fractures of the lower extremities at the Torquay gas-works, from the falling of a large mass of earth whilst engaged in excavating for a building.

The subject of this paper, J. R., was working a short distance off, and on witnessing the accident to his fellow-labourers he went to their assistance. Whilst so engaged, another mass, many tons in weight, fell on his back as he was in the act of stooping. He was thrown forward, and, for a time, buried underneath the earth.

When he was liberated it was found that he had no power over his lower extremities. On admission into the Infirmary about

* This is certainly a potent remedy in hæmaturia. It was, I believe, recommended first by Mr. Samuel Wood, of Shrewsbury.

an hour afterwards, Dr. Powell, the resident house-surgeon, immediately detected a dislocation of the left hip on to the dorsum ilii; no further examination was made until my arrival. When I first saw him he was lying on his back, slightly inclined to the left side, and complaining of great pain in the back and pelvis. He was cold and almost pulseless, not having as yet recovered from the shock. On examining him I found the head of the left femur resting on the dorsum ilii, the leg adducted, and the toes pointing inward. Proceeding to compare the two sides, I was struck with the absence of the trochanter-major on the right side, there being considerable flattening of the hip; the slightest rotation or flexion of the thigh gave the patient great pain; the leg was everted and slightly flexed, and a fulness was felt under the ramus of the ischium and pubes. From these symptoms we came to the conclusion that there was a dislocation of the right femur into the thyroid foramen, as well as of the left on to the dorsum ilii. In consultation with my colleagues, Mr. James Pollard and Mr. Huxley, we decided on trying reduction by manipulation.

The patient was put under chloroform by Dr. Macreight whilst lying on the bed in which he was first placed. On grasping the left femur just above the knee with the assistance of the two gentlemen previously named, flexing it, and rotating freely, with a tendency to abduction, the head of the bone, in a few seconds, rolled into the acetabulum with an audible snap. The patient being still under chloroform, we proceeded to reduce the dislocation of the right leg. In this case it was thought advisable to make extension previous to rotation. My brother, Mr. James Pollard, placed his left heel in the perineum, making extension from the knee, with assistance from one or two friends standing behind him; I then rotated the limb inwards, across the opposite side, and in less than a minute the head of the bone found its way into the acetabulum, without noise, simply producing a grating sensation. Both limbs could then be easily moved in any direction.

He was put on low diet, and a calomel and opium pill given at bed-time.

May 4th.—Passed a restless night; retention of urine came on during that day and the following, relieved by introduction of catheter.

May 22nd.—He could draw up both femora whilst on his back, without difficulty.

July 16th.—Was discharged, being able to walk perfectly, with the exception of a slight lameness caused by an attack of

gout in the left foot. This delayed his recovery quite a month.

As I am not aware of a similar case being on record, I send this for publication.

ARTICLE XIII.—*Aneurysm of both Popliteal Arteries treated successfully by pressure on the Femorals.*—By J. D. RENDLE, M.D.

THE chief interest attached to the following case, and which has induced me to offer it for publication in this volume of the Hospital Reports, is, that it was the first case of popliteal aneurysm cured by pressure in St. Bartholomew's Hospital. It was also, I believe, the first successful case from this mode of treatment that occurred in any of the London hospitals. The patient was under the care of the late Mr. Stanley during my house-surgeoncy; the notes were taken during treatment; the remarks are those of Mr. Stanley, and they are now in my possession in his handwriting.

John Donovan, æt. 29 years, admitted into Darker Ward, May 31, 1847; a tall stout Irishman, of temperate habits. He applied at the Surgery, complaining of general swelling of the right leg, and of a small tumour in the ham of the same limb. On examining the popliteal space, a tumour about the size of a pigeon's egg was recognized. It was of an ovoid form, soft, somewhat elastic, distinctly pulsating, and with a well-marked bruit synchronous with each pulsation. On making pressure on the femoral artery in the thigh, the pulsation ceased immediately, and the tumour became flaccid. The leg, from the knee downwards, is a little œdematous.

On examining the left ham, a pulsating tumour was here also discovered, though smaller than the one in the opposite limb, and situated a little lower down in the popliteal space. The anterior and posterior tibial arteries were pulsating distinctly at the ankle in both limbs; pulse at the wrist 90. The sounds of the heart and of the large vessels are natural. He has suffered pain daily for the last four months, at the seat of the aneurysms, after leaving his work.

History.—He is a boot-maker, and has never, except once, been laid up with illness of any kind. This was about ten years ago, when he was confined to his bed for many weeks

with rheumatic fever. He noticed the tumour in the right ham for the first time a week ago; he was not aware of the existence of any swelling in the left ham. He attributes his disease to the following circumstance:—During the last twelve months he worked the whole of each day sitting on a wooden chair, against the edge of which, in consequence of the nature of his work, he firmly pressed the back of each knee. His work required that the left knee should be raised a little above the right; consequently, the pressure was made at a lower level in the left limb than it was in the right. This evidently was the cause of the difference in the situation of the aneurysms. He states that boot-makers usually work on low stools, and not on chairs, and that he always did so previous to the last twelve months.

Saturday, June 12, 1847.—Pressure has been made for forty-eight hours during the last few days, in various situations, on the front of the right thigh, by Italian and other tourniquets, but without any benefit. The instruments employed either failed to remain in the proper position, or they caused so much pain that the man refused to have them re-applied. The weight of the instruments, and not the actual amount of pressure, seemed to be the chief cause of the pain and annoyance. This morning, at eleven o'clock, after an interval of rest from all treatment, a small light instrument was applied, which consisted of a simple clamp of iron, with a pad fixed to one end, through the other end passed a screw, and at the end of the screw a pad with a ball and socket joint. This instrument (a light tourniquet) embraced, and nearly fitted, rather more than the outer and upper half of the limb, and the artery was compressed by the screw-pad at the junction of the middle with the lower third of the thigh. Pulsation in the aneurysm ceased immediately, and the pressure did not cause suffering.

Wednesday, June 16th.— Since 11 o'clock A.M. on the 12th inst. there has not been any pulsation in the right aneurysm, nor has the instrument been once altered or the amount of pressure increased. The man has borne the treatment without the least complaint. All pressure was now removed, and there was no recurrence of pulsation in the aneurysm. Several articular arteries are pulsating distinctly at the sides of the knee; the anterior and posterior tibials are beating feebly; pulse 63. The treatment of the aneurysm in the right limb was now discontinued.

June 18, 2 P.M.—The same instrument was applied to-day to the left thigh, and the treatment is precisely similar to that

employed on the right limb. The pulsation in this (the left) aneurysm was not completely controlled until 8 P.M.

June 20.—Between 11 and 12 o'clock this morning the patient removed the tourniquet whilst sleeping. The pressure had, however, been uninterrupted for 39 hours, and during the whole of this period there has been entire absence of pulsation in the aneurysm.

June 23.—The pulsation has only been controlled for 24 hours continuously since the last report.

June 26.—Pulsation in the aneurysm stopped for the last 24 hours.

June 30.—Pulsation completely prevented for the last 48 hours. To-day the tourniquet was removed. The aneurysm has ceased to pulsate, and is considerably diminished in size. The pulsation in the articular arteries around the left knee is distinct; the posterior tibial artery beats feebly at the ankle, but the anterior tibial cannot be felt.

July 6.—The man would leave the hospital to-day. The aneurysmal tumours are much diminished in size; that in the left limb being no larger than a hazel nut, and the one on the right side is about half its original dimensions. Both feel solid and firm.

The patient was seen and examined at the hospital about three weeks after discharge, and was then well. He was again seen several weeks later, sweeping a crossing in Holborn.

Remarks by the late Mr. Stanley.

'The conclusion we may draw from the foregoing account:—That the aneurysm in the right ham was cured by compression of the femoral artery continued without intermission from the middle of Saturday to the middle of the following Wednesday—four days. That the aneurysm in the left ham was cured by compression of the femoral artery not continued uninterruptedly for so long a period at once, but with intermissions, for shorter periods—first 39 hours, then 24 hours, again 24 hours, and lastly 48 hours; after which there was no recurrence of pulsation on removing the tourniquet.'

Article XIV.—*Clinical Remarks on Deformities.*

By Alfred Willett.

(Continued from Vol. VI.)

Angular Curvature of the Spine.

THE affection, known in this country under the term Angular Curvature, receives on the Continent the appellation of 'the Malady of Pott,' in recognition of the description of the disease which Percival Pott, Surgeon to St. Bartholomew's Hospital, wrote about the middle of the last century.

I do not think any good is likely to result from calling in question the nomenclature of any disease, which receives general acceptation. I am of opinion, however, that the linking together of two words 'angular' and 'curvature,' conveying contradictory ideas, is unfortunate, as when united the term fails to give any clue to the real character of the affection. Curvature is the word I object to, and I suggest that Angular Disease of the Spine, *i.e.* disease of the spine, associated with the formation of an angle, would be a more exact definition, or I should be quite contented if it were styled 'Pott's Disease' more frequently than it is.

As regards the pathological changes that occur in the progress of this disease, but few distinctive features can be claimed. The changes produced are those which bones and joints undergo when attacked by tubercular disease; thus the ravages produced by necrosis and caries of the tarsal bones and joints, for example, are akin to those which are found in the spinal bones and joints, as they also occur under similar constitutional conditions. And as in accordance with the well-known fact that the bones prone to tubercular disease are those in which the cancellous tissue is comparatively small in quantity, being widely meshed, whilst the fatty elements are in larger proportion; hence we find the comparatively soft spongy cancellous tissue of the anterior segments—the bodies of the vertebral bones—in a state of disintegration, whilst the denser more compact texture of the several processes—the lateral and posterior segments—are unaffected. Occasionally, too, we see the intervertebral substance, with perhaps the adjoining epiphyses, preserved, whilst the intervening mass of the body has crumbled away or is lying loose and necrosed.

The mode in which the disease advances, and the extent to which the spinal column may be implicated, is of great importance.

Our pathological museums show that any number of bones, from one to ten, or even more, may be involved, and clinical observation teaches that one bone or joint being first attacked, the disease in its progress engulphs bone after bone, until it is arrested or death occurs; and its course is, I believe, somewhat of this nature.

A spinal bone or joint being attacked by caries (for there is, I think, no reason to doubt disease may begin in either, although in my opinion the cancellous tissue of the body is most frequently its seat), a loss of tissue ensues, and the two rough surfaces almost necessarily fall together; by their attrition the ulcerative process is continued; as a consequence of these changes the adjacent bones on either side degenerate, and are prepared to take on diseased action; these being in turn exposed, are rapidly destroyed by ulceration, and their surfaces still being pressed together in consequence of the weakened spine being no longer equal to support the superincumbent weight, grate at every movement. Thus are the bodies of successive vertebræ submitted to destructive changes.

If this be an approach to the truth, how important is it to appreciate the existence of disease at the earliest date. That a diagnosis may be made before deformity occurs I believe to be true. We are, perhaps, too apt to consider irregularity of the spinous processes as the first evidence of disease, and hence unconsciously to deny that disease exists in the absence of this feature. This view I regard as quite erroneous, and I feel it incumbent on me to draw attention to this point.

I have the statement constantly made to me that medical advice has been taken; that the patient's back has been examined, and the patient then told nothing was wrong, as there was 'no bone' out; all this, be it noticed, occurring in the face of a train of symptoms which in my experience are almost invariably present before any irregularity of the spinous processes can be detected, and on which I am of opinion a diagnosis may be founded.

The symptoms that denote incipient disease of the spine are these: restlessness and starting at night, and persistent complaint of pain in the back; a constrained gait when moving about; inability to stoop; shrinking from playmates and their games; cramp in the thighs; a sense of constriction, as of a cord being tightly drawn around the body. In addition to these are evident signs of deterioration of health; loss of

appetite and of strength, wasting, feverishness, fretfulness, quickly tiring, and—what is quite constant in acute cases—a wan, haggard aspect.

The majority of these symptoms are present in every patient, generally before deformity is evident; certainly when existing, they ought to be regarded as undoubted evidence of the commencement of angular curvature, as much as if a projecting spinous process were discovered.

With regard to the causes of this affection, it is not necessary to look very far to find predisposing conditions to it, at least among the class from which hospital out-patients are drawn. Ill fed, often half-starved, and even worse cared for, what wonder is it that the children of the poor in London fall victims, on the least provocation, to some cachectic type of disease? But I would ask, should proneness to disease be regarded as the all-sufficient explanation? Should it not rather make one more vigilant to look out for, so as to ward off the effects of what may be, the exciting causes?

Among children, whooping-cough, or one of the common infectious disorders, are often mentioned as having originated the affection; but perhaps more frequently than all these, slight injuries, as falls out of bed, are stated to be the cause. I cannot dismiss any of these as of no account; although with regard to the first-mentioned as a class, it is difficult to determine satisfactorily the connection as cause and effect. But I have no doubt minor injuries of the spine are frequently exciting causes; indeed, when complaint of pain has existed from the date of injury until the symptoms of disease have supervened, it appears to me impossible to doubt the connection. So frequently does this happen, and with so constant a repetition of the same statement, made quite voluntarily, that I am satisfied of its truth.

In treating of angular curvature, owing to the greater liability of the dorsal spine to disease, one's mind is very naturally led to think only of disease in this region, as if it comprised the whole subject, and in some senses this view is not unreal. Certainly for clinical purposes the anatomical division of the spine need not be observed. It is quite sufficient to assume a separation at the level of the shoulders into cervico-dorsal and dorso-lumbar sections, the former having the weight of the head only to support, the latter having also the trunk and upper extremities. As I am now approaching the subject of treatment, this will be a very convenient arrangement to follow.

Before doing so, however, it is essential to notice the two prevailing opinions on this question. One, which some years ago was generally adopted, and which even now is largely held, may be thus stated. The local affection is only a proof of the strumous diathesis, and deformity is Nature's mode of cure. Therefore the point requiring attention is the improvement of the general health; and if this can only be effected, the spinal disease may be left to itself; anchylosis will occur, with more or less deformity. But deformity to the patient, be it remembered, signifies a dwarfed, hunch-backed cripple, with perhaps his thorax contracted, his heart displaced, his respiration and circulation impeded. Among the well-to-do classes recoveries of this kind are frequent, perhaps to be anticipated in all chronic cases; but in the acute, paraplegia, psoas, and lumbar abscess put the patient's powers to the test: whilst for the poor in a crowded city, such directions lead in all cases to a most unequal struggle.

On the other hand, those who have devoted themselves to the treatment of deformities, noting the insidious onset of the disease, and the wreck it often left the subjects of its attack—observing, too, how bone after bone was destroyed in its progress—adopt the principle that, before all things, it is necessary to arrest the advance of the disease, regarding the state of the patient's health as being in great measure dependent upon the suffering necessarily associated with the disease. To effect this, some authorities on the subject impose absolute rest in the recumbent posture, until they regarded anchylosis as having occurred, and then very tentatively watch the completion of the cure. It is obvious this plan of treatment must be insupportable to all except those provided with means to procure many comforts out of the reach of the poor; equally plain is it that it would be futile to attempt to impose it on children, and there is an additional reason for this statement, that children pine away much more rapidly under confinement than do adults, who, it must be allowed, unless there be suppuration, or some cause for exhaustion, bear a prolonged confinement to the recumbent posture with but little impairment of health.

But I suppose the treatment most generally adopted in the present day for all ordinary uncomplicated cases is mechanical support. The principle is undoubtedly a rational one, that of sustaining a column, weakened on one aspect, and in gradual process of decay, by external support. It is, however, when we come to examine the application of this principle, which, it is evident, may be accomplished in many ways, that we

observe that a single method has almost exclusively been put into practice; and it will, I think, be shown that the result wished for has not and cannot be attained by this particular method. In order to make my meaning clearer, let me revert to the illustration of a column, weakened at one point, and the means that might suggest themselves for sustaining it in the erect position, or for preventing the upper portion from further disposition to collapse on the lower.

One might, for instance, shore up the upper portion, and thus relieve the damaged part from the superincumbent weight. For this to succeed, no yielding, either of the props or of the parts to which they are affixed, can be permitted. Now this is precisely the scope and object aimed at by the employment of the spinal support in common use.

Let me assume a case of disease about the middle of the dorsal vertebræ, and portray the application of this instrument. From the pelvic girdle on each side would arise a bar, having a crutch at the upper end, which is fitted to the axilla; a corset around the thorax, or a pad over the projecting spinous processes, may be added to it; the instrument is now said to be designed to take, from off the spine, the weight of the parts above the disease, transferring it to the instrument by means of the two axillary crutches. Now let us examine into the conditions necessary for success, and see if they are duly attained. First, we notice the almost inevitable downward sliding of the pelvic girdle; this, it must be confessed, is far from being an unyielding basis. Not, however, to overmagnify this point, let us next turn our attention to the other extremity of the props, the points where the weight is received. And what do we find here? Actually as movable a condition of parts in all directions but the backward as any in the whole body, connected as it is with the skeleton only at the sterno-clavicular joint. Can it be necessary to point out the extreme ease and range of motion in the upward direction, when, for our purpose, there should be absolutely none? The progress of our patient under treatment with this instrument may be told in few words, viz., from bad to worse. His shoulders are pushed up until his head is seen sunk in a valley, as it were, between them; and, as to the disease, it progresses absolutely unhindered. Confessing that this represents an exaggerated view, still it is not so far beyond what I have more than once seen. In truth, the following case was in my mind whilst penning the above.

A girl, aged 15, came under my care in March 1869, with

disease of the spine at an early stage; the symptoms being of two months' duration. There was a slight projection of the spinous process of the eighth dorsal vertebra, and I was confident that not more than two bones were at that date affected. I advised her to procure a spinal support, and offered to admit her into the hospital while it was fitted on under my supervision. I saw no more of her at that time. She reappeared in January 1870, some nine months later. I could not recall her case, so altered was she, until I referred to my notes. She appeared much shorter, with her head sunk between her shoulders, thin, pallid, evidently extremely ill. She had on an instrument such as I have described, which had been obtained from a charitable society. On examining her back, the disease had advanced steadily since I had previously seen her. An extensive irregular angular projection existed, which, I judged, was produced by disease in five or six bones at least, as nearly the whole dorsal spine was taken up in the formation of the angle. She assured me she had worn the instrument uninterruptedly, and, as the skin over the apex of the angle was much thickened, and sore from the pressure of a pad that had been placed over it as a part of her support, I believed her story. This, if the worst result, is but one of numerous examples I have met with, following the use of what I would call the English spinal instrument, and I rejoice that its radical defects were made known to me at an early period of my taking charge of the Department for Deformities at St. Bartholomew's.

In 1867, Dr. Taylor, Surgeon to the New York Orthopædic Hospital, visiting the London institutions, showed me an instrument he had devised, being convinced of the essentially bad principle of the ordinary forms. The impression made on me by his views was such as discovery of the truth and denunciation of error invariably occasion. Dr. Taylor gave me a pamphlet he had written on the subject, which I studied with the greatest interest, and which has been my guide in practice since. I shall always feel deeply indebted to Dr. Taylor for the clearer insight into the disease his work gave me.

In one part, explaining his views and speaking of a patient suffering from Pott's disease, Dr. Taylor says: 'It will be seen that the spine bends at one point, and is nearly straight for a certain distance above and below that point; in other words, the disease, by weakening the spine at one point, has made the rest of the column relatively stronger, so that flexion, instead of being distributed along the whole spinal column through twenty-four vertebræ, occurs almost entirely at one

point, and that is the diseased portion, which, by reason of being diseased and incapable of sustaining its accustomed amount of pressure, is forced, although weaker, to receive a much larger amount of pressure.'

The appliance Dr. Taylor devised, and which I term the American instrument, is based on the principle (to bring forward again my illustration) that a column decayed on one side, and in danger of falling in, may be secured by applying a rigid bar along the sound side and lashing the weakened column to it. The result is, that this damaged place is effectually relieved of weight from above, the line of pressure being transferred to the sound side.

This may be made more evident by experiment. Take a cane and bend it, it yields equally throughout; but cut a deep notch into it, now, on bending, it will yield at the weak spot, and only here, until the cut surfaces come into contact, and if still further bent, it will be found that the strain of pressure is on these surfaces; again, if one wished to straighten the cane or pull apart the cut surfaces, the easiest plan would be to bend it in the opposite direction across one's knee, but if not so much force was required, the stem might be held with one hand, below the cut, whilst with the other the top was grasped and drawn backwards, making use in fact of a fulcrum and lever. No one would attempt to straighten the crook by pulling at either end in the directions in which they were placed. This principle of 'leverage' is applied by Dr. Taylor in the construction of his instrument. 'For the human frame,' he observes, 'we find a happy conjunction of favouring conditions.' 'The lever employed is what is called the knuckle-joint, where force is applied with the greatest economy known in mechanics.'

The instrument I recommend is constructed as nearly as possible after Dr. Taylor's directions. It consists of a light, close-fitting pelvic band, from which two metal pieces or levers pass up the back, one on either side of the spinal processes, partly to avoid pressure on these, and partly to prevent lateral deviation. Joints acted upon by rack and pinion are placed opposite the diseased point. The levers are carried up to the level of the shoulders, where they are united by a cross piece, which is extended at either side to the axilla, ending in a curve which, passing forwards and upwards, embraces the shoulders in a firm grip. At a part of the instrument opposite, or rather below, the seat of disease, pads are placed, and upon them the power of the fulcrum is exerted. The instrument acts like a double lever, with a common fulcrum at or just

below the curvature, the action being directly backward at the hips and shoulders, and directly forward at the point of disease, although it is evident the amount of action is not equal, nor, perhaps, would it be well if it were: in effect the lower part of the spine is well-nigh fixed, the upper is consequently more acted upon. When the instrument is put on, the direction of the parallel levers having been previously altered by a turn or two of the rack, so as to meet the angle of deformity, the joints are moved so as to bring the bars straighter, and by so doing the upper part of the body is drawn more nearly upright, and necessarily the diseased surfaces of the bodies are separated. The articular processes which being healthier are able to do so, now take a good share of the weight of the body, the rest being diffused over the lower part of the spine, by means of the metal levers. As regards the diseased surfaces, the principle of extension, so invaluable in the treatment of diseased joints, is introduced, the carious process is arrested, and healing stimulated. Dr. Taylor observes, 'Every attempt at forward flexion, the effect of which, without the instrument, would be received on the diseased vertebræ, is now borne by the instrument, which acts as a constant protection to this part of the spine, sustaining in itself every strain and jar. It is a kind of splint for the, in effect, broken back.'

Dr. Taylor believes he is able by his instrument to reduce the angle and restore the normal outline of the spine. I have not attempted to follow him in this practice, questioning its prudence, and doubting the possibility of effecting it, but I speak confidently of its power of at once arresting the onward course of the disease, permitting healthy action in the bones, producing fibrous union, and subsequently bony anchylosis, with but little if any greater deformity than existed at the date of its application, no more indeed than consolidation of the parts would require.

To show how quickly a patient's sufferings may be relieved by aid of this instrument, I cannot refrain from quoting one case. A ship's steward fell down one of the vessel's ladders, and soon the symptoms of Pott's disease supervened. Four months after the accident he arrived in England, and came under my care as an out-patient at St. Bartholomew's. Movement appeared to cause him great suffering; he had the constrained gait in an extreme degree, taking hold, for support, of everything he could grasp as he came along. He looked ill, his skin was dry and harsh, he had lost all appetite, and could get no rest, although tolerably free from actual

pain when lying down; walking was painful, but every other motion was agonizing: his back grated, he said, at every jar, and even in walking he was obliged at short intervals to stop and rest his back, by placing his hands on his thighs. An angular projection, involving the 5th, 6th, 7th and 8th dorsal vertebræ, existed. Under my directions he was fitted with the American support. He came to show himself after he had worn it a fortnight, improved beyond conception. He walked in quite briskly, with a bright countenance, all his symptoms were greatly ameliorated, he could walk a mile comfortably, his appetite and sleep had returned; in fact, he told me he intended going to sea again, as he felt he should soon be quite well. I only saw him once after; he was steadily and quickly improving, and then, in spite of my remonstrances, rejoined his ship.

Perfectly satisfactory as I regard this instrument, it yet has one serious drawback in common with all other forms, viz., its cost. Three or four guineas is a sum but too often beyond the command of hospital out-patients; it frequently happens they cannot produce half the sum required; our hospital Samaritan Fund is always most liberally drawn upon to provide a portion of the cost, but if the remainder be not forthcoming, the patient necessarily cannot have the instrument, and in very many instances this used to be the case. My thoughts were long since turned to the possibility of constructing a cheap yet efficient substitute; Mr. Pratt, of 420 Oxford Street, instrument-maker to St. Bartholomew's, ably seconded my wish, and, at a cost of some 10*s.* or 12*s.*, I am able to obtain a fairly satisfactory appliance. The material made use of is ash wood; two flat pieces, moulded when rendered pliant by steam, are placed one on either side of the spinous processes, they are joined together at the sacrum, where a band passes around the pelvis, as well as at the part of the shoulders, from which cross pieces pass to the axillæ, and terminate, as before described, in the American splint; a stout ticking belt binds the trunk against the wooden bars; there is of course no movement power. An experience of over three years enables me to speak of it with considerable favour as being fairly efficient. It is only intended to meet the requirements of the children of the very poor, and is necessarily but a rough contrivance.

My colleague Mr. Morrant Baker, devised a support based on the application of elasticity, using steel bands set backwards from off the angular projection, instead of the rigid wood. This does not add much to the cost, and is, I think, a decided

improvement. It is very light, and I am not at all sure that it is not the best appliance for children that can be made.

I do not think the American, or any of these instruments, can, with advantage, be applied in cases of excessive deformity. Neither are they likely to be of avail when psoas or lumbar abscess have added a complication; then indeed I fear neither the surgeon's art nor mechanical skill are likely to benefit the patient.

So far as I know, paraplegia has not supervened in any case after treatment was commenced. In several instances it has existed completely, or in less degree, on the patients coming under observation. This addition to the affection obviously compels the patient to keep in bed. I have, in one or two instances, employed issues, as Pott directs. I am not able to speak positively as to their utility: I cannot say they hastened recovery; on the other hand, one man was certain he was easier as regards cramp, and had increased muscular power, when his issues were suppurating: I regard paraplegia in this disease as by no means hopeless. Within the past two years I have watched two men through this condition; galvanism was of much service in the improving stages. After two years, without sign of returning power, I should despair of recovery.

The salient features of disease of the cervical and cervico-dorsal spine are great thickening of the deep tissues of the neck—'Nature's splint,' as this condition has been fitly termed. The patient's head is fixed, with his face raised and thrust forward, and there is a sense of need of support for the head, shown by the patient's hands being constantly raised to it. If the symptoms set in very acutely, I think no treatment so effectual as that by position. I advise the patient to lie in the recumbent posture, with only a small soft pillow, hollowed out for the reception of the head. This practice can only be adopted when the patient is of an age to understand its object. For all other cases, nothing seems to answer better than a well-adjusted leather collar. It should be moulded in one piece, large enough to take a good bearing from the shoulders, lacing up in front, and embracing the head from the occiput to the symphysis of the jaw. I have seen patients recover with singularly little deformity under this plan; and I look upon it as far more trustworthy than the ingenious but generally cumbersome contrivances of the instrument-makers.

Abscess is not a common complication of disease in the cervical region. Symptoms of pressure on the cervical portion of the cord are rare in my experience, but when present are an alarm-

ing feature; little beyond position, however, can be done to relieve them. I have never met with a case of sudden accidental death from rupture of the transverse ligament of the atlas; but I have found this and the odontoid ligaments disorganised and loosened from their connections, when the stages leading to death have been gradual.

Article XV.—*Case of Ligature of the Common Iliac Artery.* By W. Morrant Baker.

In September 1871, I was requested to examine a patient who had been admitted into one of the medical wards for what was supposed to be rheumatism or sciatica in the right lower extremity; but which, on examination by the house physician after admission, had seemed to be a large abscess in the gluteal region.

The patient (J. S.), a spare and pale youth, 17 years old, was a gardener's labourer; and the only history of his disease which could be obtained was, that a month before admission, whilst digging a piece of hard ground, he suddenly felt a gnawing pain in the right hip. The pain had not left him since, and had become gradually worse.

On examination, the whole of the right gluteal region was found occupied by a tense, elastic swelling, giving on pressure a distinct sense of fluctuation, acutely tender, and at one spot, near the posterior inferior spine of the ilium, apparently 'pointing,' abscess-like. There was no redness or œdema of the integuments; nor, on the other hand, was there any pulsation or other indication of the presence of blood.

The patient, who seemed somewhat exhausted, was suffering very great pain, and referred it not only to the gluteal region, but to the back of the thigh and leg also, in a way that suggested flashes of pain in the course of the sciatic nerves.

The pain was so great that it was thought right at once to puncture the swelling. It was accordingly opened with a long narrow scalpel at the part at which it pointed; when there immediately issued, to the distance of several inches, a small stream of arterial blood. Some blood-clot prolapsed into the opening made by the scalpel and prevented a larger stream. The stream flowed uniformly, without a trace of arterial

jerking, and was governed, apparently, only by accidental or intentional interference with the hole from which it issued; for one was struck by the absence of any marked effect on the stream when pressure was made on the tumour. Nor was the latter made less tense or full by the escape of the blood.

The hæmorrhage was easily stopped by a pad of lint and moderate pressure; and one of my surgical colleagues, who was by chance in the hospital, met me in consultation.

It will, perhaps, give the best idea of the general aspect of the case at this time, and the absence of resemblance to a blood-tumour of any kind, if I add that, notwithstanding the escape of blood which followed the puncture, my colleague, after careful examination of the gluteal swelling, came to the conclusion that the supposed abscess-sac had not been punctured, but that an artery outside had been accidentally wounded.

It was determined to explore the swelling at once, and discover the source of hæmorrhage, whether the tumour or some vessel accidentally wounded; and, chloroform having been administered, the opening made by the scalpel was enlarged sufficiently to admit the fore finger, with which, used at the same time as a plug, the immediate cause of the swelling was readily discovered.

The finger at once entered a large cavity, intersected in various directions by what seemed bands of fibrous tissue, and filled with liquid and coagulated blood. The deeper boundary wall of the cavity was formed by the innominate bone, and the superficial by the gluteal fascia and muscles. On now carefully examining the adjacent regions, it was found that the iliac and psoas regions were full and tense, and a considerable swelling could be felt, on examination per anum, in the right ischio-rectal fossa. In neither situation could any, even the slightest, pulsation be discovered, nor any unnatural pulsation in the abdomen or upper part of the thigh.

There appeared no doubt now that the case was one of extensive hæmorrhage, and that blood had extended into and filled the gluteal region and iliac and ischio-rectal fossæ. Whether the source of the hæmorrhage was within or without the pelvis seemed, however, quite uncertain; and, in the absence of any clue, it was decided to explore first the gluteal region, where there was already a wound. The wound in the gluteal region was therefore enlarged, and the clots as rapidly as possible sponged away, so as to obtain a good view of the deeper part of the cavity. It was then found, almost immediately, that the hæmorrhage was from within the pelvis; a steady stream of

arterial blood welling up out of the great sciatic foramen from a source too deep to be exposed. The sciatic foramen was at once firmly plugged with lint, so as to control the hæmorrhage; and, the condition of the patient not justifying any further procedure at that time, he was allowed to recover from the effect of the chloroform.

The patient rallied very fairly in a few hours, and on the following day his general condition was not worse than might have been anticipated from the loss of blood. No further hæmorrhage had taken place, nor was there any notable change in the state of the swelling in the iliac fossa. But the pain was now again very acute, both in and about the pelvis, and in the leg.

On consultation with my colleagues, it was agreed that the best chance for the patient, in the absence of any guide to the nature of the disease which had resulted in the hæmorrhage, lay in the ligature at once of the common iliac artery; in other words, in carrying into effect what seemed the most likely means of relieving, with least risk, the present most urgent danger—loss of blood. The common iliac artery was, therefore, tied. The operation was done in the manner usually recommended, by making an incision a little below and to the inner side of the anterior superior spine of the ilium, and extending it upwards, with a slight curve, for about four inches. After dividing the integuments and muscles and fascia transversalis, the peritonæum was raised, and the artery exposed sufficiently to pass the ligature around it; the patient's spare condition making the operation comparatively easy.

After the ligature of the artery, the wound in the gluteal region was examined, in order to discover whether the hæmorrhage had been controlled. On removing the plug from the great sciatic foramen, I was disappointed at finding that some bleeding from the pelvis still occurred; but it was readily stopped by the application, just within the foramen, of a pair of artery-forceps, and pressure by a plug; and from subsequent events I am inclined to believe that the main source of the hæmorrhage had been controlled by the ligature of the common iliac artery.

On the day following the operation, the patient's general condition was that of moderate exhaustion: he had passed a quiet night, sleeping during a part of it, and had taken nourishment and stimulants in fair quantities. The pulse was 144, and the temperature 103·8 F.

The gluteal wound had already become very offensive. The

plugs of lint were therefore carefully removed, and no hæmorrhage occurring, the wound was syringed with a lotion of permanganate of potash. The leg and foot had fairly kept their temperature and colour. But the gluteal region and upper part of the thigh had begun to show a purplish and greenish tint, either from infiltrated blood or commencing decomposition.

In the afternoon of the same day, no evident change had occurred in the patient's constitutional state; but the local conditions in the gluteal region and upper part of the thigh were worse, and gangrene appeared imminent. The appearance of the limb lower down indicated nothing specially wrong, and the foot was almost normal. Within a few hours afterwards, the discoloration had extended lower in the thigh, and the whole limb was becoming œdematous. The patient died forty hours after the operation for the ligature of the artery.

At a post-mortem examination, the tissues of the gluteal region and upper part of the thigh were found much decomposed. An appearance as of commencing decomposition extended also for some distance down the limb. The lower part of the leg and the foot were comparatively sound.

The common iliac artery was found tied at the junction of its middle and lower third.

On examining the iliac and ischio-rectal fossæ of the affected side, but little was at first discovered beyond the stripping of the fascia off the muscles and bones, and the occupation of the whole of this side of the true pelvis by black and putrid shreddy remains of muscle, connective tissue, and blood-clot. On more closely examining the parts, after as much cleansing as was possible, the sacro-iliac joint was found open; and on making pressure on the side of the pelvis, the joint gaped readily, and as much as the attachments of the bone in front would allow. The part of the ilium immediately adjoining the articulation was bare, and somewhat rough; while in continuity with this roughened part, and on the inner surface of the iliac fossa, was a well-defined but slight depression, measuring two inches by one and a half, bounded by a slightly elevated ridge of bone.

In front of and below the sacro-iliac joint was a considerable quantity of dense fibrous tissue, formerly, I presume, part of the wall of an abscess, with a shreddy and flocculent surface turned towards and continuous with the ill-defined space, which the escaping blood had torn for itself in the iliac and ischio-rectal regions. This thickened tissue involved and surrounded the branches of the internal iliac artery; the latter seeming to

pass down into it, and lose itself by dividing into branches, one or more of which must have passed on to the inner wall of the abscess. No trace of aneurysm of any of the branches of the internal iliac artery could be discovered.

Within the peritonæal sac no inflammation or other mischief was present; and the condition of the thoracic and abdominal viscera was such as to require no special comment.

The circumstances under which the post-mortem examination was made did not permit the careful dissection which would, with injection of the vessels, have alone allowed the exact source of the hæmorrhage to be traced. There can be no doubt, however, that the blood escaped from a branch—probably a main branch—of the internal iliac artery, opened by extension through its walls of the ulcerative process, which involved the tissues through which it ran; and that the blood had tracked its way within the pelvis, and outwards through the great sciatic foramen, in directions determined only by the least amount of resistance.

It is, therefore, to be presumed, that disease of the sacro-iliac joint was the beginning of mischief, which, by extension in the pelvis, led ultimately to ulceration through the coats of one of the main branches of the internal iliac artery.

Article XVI.—*Condition of the Muscle in Pseudo-Hypertrophic Muscular Paralysis.* By Hy. T. Butlin.

As, during the past year, four cases of this peculiar form of progressive paralysis have come under treatment at the Hospital for Sick Children, and as in three of them I have had, thanks to the emporte-pièce of Messrs. Colin and Robert, an opportunity of examining the condition of the muscle of the calf, I thought an account of this would not be uninteresting; first, because no detailed microscopic examination has, so far as I am aware, yet been published in English; and, secondly, because the disease itself, although by no means common, is rendered yet more rare by being overlooked. And on this last account it may not be amiss if attention is first drawn to the most prominent features of the disease.

The condition in which the children were brought to the hospital was much the same in all four cases.

A boy, of perhaps 7 to 10 years of age, is brought to the out-patient room because he walks so badly, or because he tumbles down so often—in fact, because he is weak on his legs.

He is made to walk across the room. This he does slowly and awkwardly, stepping on the front part of the feet, with the toes generally turned slightly inwards, the feet rather far apart, and the heels raised up from the ground. He does not lift his feet well, but rather slides them; and, with each step, the body is swayed slightly to one side and the other alternately. The back is usually much curved forwards in the lumbar region, producing a marked lordosis. The abdomen and chest are protruded; and, if the condition be advanced, and the boy find much difficulty in walking, the head is slightly thrown back, the muscles of the back are tense, and one or other corner of the mouth is drawn down, apparently owing to the intense exertion.

In walking up-stairs, each step is gained slowly and with difficulty, first one foot being placed upon it, and then the other, the patient meantime clinging to the banisters, and dragging the body up by their means.

If he be put to lie on the floor, his mode of rising again is most characteristic. He turns over on to his hands and knees, then extends the legs behind him, the feet being rather far apart, and only the toes touching the ground. Each foot is now gradually brought more forward by alternate steps (and still at some distance apart), until the hands lie between the feet, and all four are in a parallel line. The body is next raised by each hand being placed on the corresponding lower extremity—first on the ankle, then knee, thigh, and loin. When it has reached the perpendicular, the feet are brought together, and the operation is complete. Each step is slowly achieved, and with great labour.

At a slightly later stage the patient can either only rise with the aid of a chair or some other support, or, indeed, not even with this.

Yet, when the boy is completely stripped, the first thing which strikes the eye is the marked development of the muscles of the lower limbs as compared with those of the upper. The calves and buttocks are especially prominent and firm, whilst the muscles of the arm are either apparently normal, or even of less than normal, size, so that the anterior fold of the axilla may be almost obliterated. The lower spinal muscles are also very much enlarged; the extensors of the legs, the infra-

spinati, deltoids, and temporal muscles to a less degree. The atrophied muscles are generally those of the fore-arm and arm (especially the latter), the pectorals, the supra-spinati, and teres muscles.

A more detailed description scarcely lies within the scope of this paper, but I would draw attention to one fact. The most hypertrophied muscles are also shortened, apparently not tonically contracted, but mechanically prevented from falling into the normal condition of such muscles during rest. And the effect of this on the parts to which they are attached is naturally to draw them closer together. Thus, owing to the condition of the muscles of the calf, the heel is drawn up, and the foot is kept extended, so that talipes equinus is produced. And, in the same manner, the lordosis observed appears to be due in part to the shortening of the lower spinal muscles. These muscles, however, are not incapacitated from acting, for the foot can be still more extended; whilst the inability of the extensors to bring it up to a right angle with the leg, and the mode of walking, rising from the ground, &c., point rather to a still greater weakness in the extensor muscles.

To complete this rough sketch of the disease, let me add that it has seldom been observed in females; that it appears to occur at a very early age; that the patients are, for the most part, deficient in intellect; that the paralysis is progressive, but very slowly so, and with long periods of interruption; and that death usually occurs from some low form of lung disease.

Only two autopsies are recorded, the one by Cohnheim and Eulenberg* of Berlin, in which the nervous centres are reported to have been perfectly normal. And one by Mr. Kesteven, in which lesions of the brain and cord were discovered. But as this last case was somewhat complicated, we are still at liberty to consider the disease as an affection of the muscular system; and with this view let us proceed to the examination of the condition of the muscles.

Muscle was removed from the calf of three boys, aged respectively 9 years, 8 years, and 8 years, and was compared with muscle treated in the same way from a perfectly healthy leg. And as the specimens differed in no essential particulars in the three cases, we may take one as an example. In the case of M——, æt. 8 years, a small portion of muscle was removed by an incision, and small as the piece was, it was yet sufficient to make sections from.

* *Berliner Verhandlung*, 1867.

Taking a tiny portion, and teasing it out with needles, the first thing noticed is the comparatively few muscular fibres lying imbedded in a mass of connective tissue. Further, a good deal of fat is seen, both floating about in the form of globules of various size, and also lying in true adipose tissue. And in this consists the essence of the disease. The muscles are enlarged, not by hypertrophy or hyperplasia of the muscular tissue, but by the formation of a greater or less quantity of connective and adipose tissue.

The connective tissue is found usually in a tolerably high state of organisation; wavy bundles of fibres and yellow elastic fibres occur frequently. Few nuclei or cells are observed, even after treatment with acetic acid.

Sections made in various directions show that it lies between the muscular fibres, separating them from one another often to a considerable distance. The small quantity of fat which is seen here is deposited in the form of larger or smaller globules,

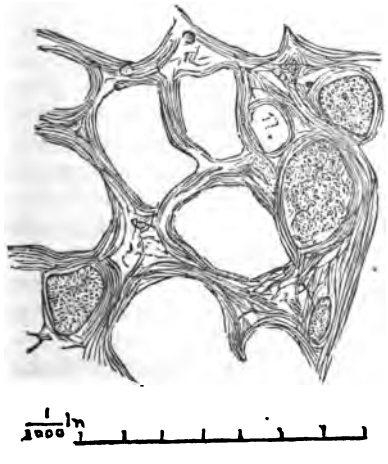

Fig. 1.—Section across the direction of the Muscle, showing several fibres in position and empty spaces left by other fibres (A $\frac{1}{5}$ in).

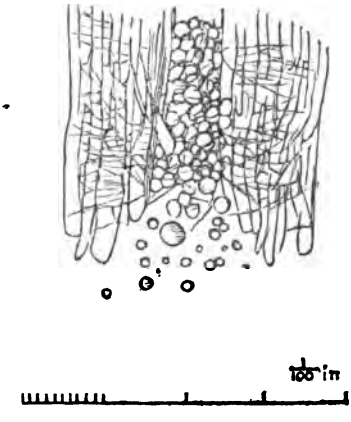

Fig. 2.—To show Adipose Tissue between the bundles of Muscular fibres (A 1 in).

but there is no distinct adipose tissue. This, indeed, appears to lie between the bundles of fibres, where there naturally occurs a more considerable quantity of connective tissue, which is still further increased by the disease. It is not, so far as I

have observed, marked by any peculiarity of structure. The cells often contain crystals of margarin.

The muscular fibres next demand attention. And the most important alteration in them is certainly an alteration in their diameter. Many of them are so small as to reach to only one-third or one-quarter of the normal size, but otherwise they do not appear to have undergone any material change.

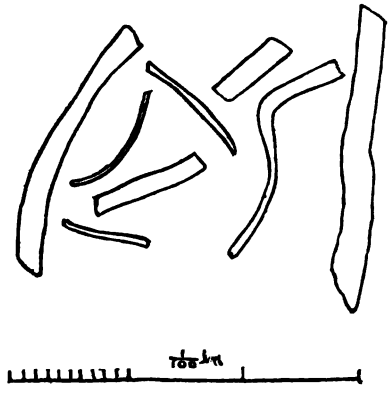

Fig. 3.—To show difference in size of Muscular fibres. Diagrammatic (B 1 in.)

The tranverse striæ, as Dr. Duchenne pointed out, are often not well marked, and indeed in some of the fibres they cannot be seen at all. But this is not so important, apparently, as he at first considered it to be. For, a close examination of perfectly normal muscular fibre will show that the transverse striation is often incomplete, and that such a typical fibre as is depicted by him is so rare as to be seldom seen. Moreover, this indistinctness and fineness of the transverse striæ is not most observable in those of the muscular fibres which are in other ways manifestly the most affected, namely, in the atrophied fibres, but occurs indiscriminately in both the largest and the smallest fibres. They contain no fat in their substance, nor are they more brittle than normal fibres.

But there is yet another element observable in certain of the teased-out portions which does not appear to belong either to muscle or to connective tissue—fragments of greater or less length, with tolerably distinct outlines, but neither transverse nor longitudinal striæ. These seem occasionally twisted or doubled-up. They are not numerous, but occasionally two or three of them may be seen lying close together. I can only imagine that they are empty sarcolemma sheaths, such as Cohnheim believed that he saw. If they are not so, I can find no place for them.

Thus it will be seen that the change in the muscle as a whole consists in a hyperplasia of the interstitial connective tissue, with the formation of adipose tissue where this is most

abundant, whilst there is a marked diminution in the size of many of the muscular fibres, with perhaps total obliteration of certain of them.

The history of the change can only be imperfectly made out by a reference to the accounts given by others.

The French descriptions* accord in most of the essential particulars with the description given above. But certain of the German accounts speak rather of an enormous production of adipose tissue between the muscular fibres than of a formation of fibrous tissue. And to such an extent was this noticed that Heller proposes to name the disease 'lipomatosis luxurians.' †

But the patients from whom this very fatty muscle was taken, and especially those of Griesinger ‡ and Cohnheim,§ presented the symptoms of a far more advanced state of the disease than most of the patients examined by Dr. Duchenne or any of those seen at the Children's Hospital.

Therefore we are naturally led to infer that the formation of connective tissue is an earlier stage than the formation of fatty tissue. And this is rendered still more probable by the appearance of fat-drops of various sizes in the interstitial connective tissue, and by the occurrence of adipose tissue only where this is found normally in largest quantities.

Proceeding from this basis the progress of events appears to be somewhat as follows:—

In the earliest conditions of the disease, the very small quantity of connective tissue which normally exists between the muscular fibres becomes increased in quantity and fibrillar, whilst the larger quantity of connective tissue between the primitive bundles undergoes a proportionately still larger increase. Later a deposit of fat takes place in this newly-formed tissue, probably in the cellular elements, and the deposit is most abundant where the connective tissue is in greatest quantity. As this deposit increases it forms for itself wider and wider meshes in the connective tissue, until at last a true adipose tissue is produced.

Concurrently with these changes, and probably in great part due to them, proceeds an atrophy of the muscular fibres, which may even advance so far that nothing remains of many of them but their empty sheaths.

* 'De la Paralysie muscul. pseudo-hypertrophique.' Par le docteur Duchenne (de Boulogne). Paris, 1868.

† 'Deutsch. Archiv. für klin. Med.,' 1865.

‡ 'Archiv. für Heilkunde,' 1865. § Loc. cit.

In conclusion, I may mention that the removal of the portions of muscle by the emporte-pièce histologique has in no case been attended by unpleasant consequences, and it has not even been found necessary to cover the tiny wound made by the operation.

I have not examined any of the atrophied muscles of the upper extremity, as their condition is stated by the German authorities to be essentially the same with that of the hypertrophied muscles, and because their thinness would render it difficult to operate successfully upon them.

Article XVII. — *On so-called Bed-sores in the Insane.*—By T. C. Shaw, M.D. Lond.

In the last stages of dementia paralytica, the final development of general paralysis of the insane, it is only too common to meet with sores, not only on the parts of the body exposed to pressure, but elsewhere, which are slow and difficult to heal, very offensive in their nature, and tend to hasten the end. By many they are called bed-sores, but improperly so, for under this heading two kinds of sores have been confounded. It is worth while to note the distinction, because so much odium is connected with the presence of these sores, and they are set down to bad nursing or inattention. The class of cases I am especially alluding to consists of those (chiefly men) who have passed through the primary and secondary stages of general paresis, and have reached the period of dementia, in which the manifestations of mind are almost absent, where the urine and fæces are passed involuntarily, and often unconsciously, and where the patient is confined to bed, or able to get up for a few hours only, during the day. Most of them have by this time lost flesh to a large extent, but others retain a considerable degree of plumpness, though the dementia and incapacity for walking may be extreme. In both classes, however, sores form which are similar in character and results—but which are not bed-sores in the true acceptation of the term. What, then, is the nature of the sores in question? They are *local gangrenes*, the consequence of constitutional defect, and are in no way connected with pressure or with irritation from acrid excretions. The ordinary bed-sore seen in feeble persons (or even in strong individuals confined to bed for a considerable period from a surgical injury or otherwise), is very simple in its history and

progress. There is first a redness of the skin, attended with pricking and itching; then the cuticle separates, and the skin and subjacent tissues ulcerate at one or more points, and perhaps eventually slough; but this is a *gradual* process, extending over a considerable time, and is confined to places exposed to pressure and in contact with discharges, as the sacrum, the trochanter of the side on which the patient has been lying, the prominent parts of the scapula, &c. The history of the local gangrenes which occur in insane paralytics and dements is very different. They are distinguished by *rapidity of formation, occurrence on parts of the body not subjected to pressure*, as well as over the sacrum and trochanters, and by *general appearance*. Commencing by redness in a circular area (or rather a lividity denoting considerable venous congestion) in a very short time the skin dies, and a black hard patch is formed. After a period varying more or less from a couple of days to a week, this black patch separates, together with the dead parts beneath it, and a cavity is left, which is, in some cases, slowly filled up by granulation; in others remains as a cavity till death ensues from exhaustion. The rapidity with which these gangrenes occur is different from anything noticed in bed-sores. To give an instance:—

H. B. was a man in the last degree of paralytic dementia, unable to walk or to feed himself, and passing evacuations involuntarily, yet withal stout. He was, moreover, restless, constantly groping about the floor under the influence of delusions. I saw him about twelve o'clock in the day, and noted particularly that all signs of bed-sore were absent. On visiting him the next morning at ten o'clock, there was a large black gangrenous patch, of the kind above described, visible on the right buttock; but the formation of this had been extremely rapid, and the attendant in charge of the patient could give no history of any antecedent redness or sign of inflammation. The rapidity suggests a blocking of the capillaries by matters carried in the course of the circulation from a certain part, or some altered condition of the blood, causing the same result. That this is so I have at times been able to prove directly; when, for instance, one of these patients has fallen down, or by slight accident has caused an abrasion on some part of the leg, leading to a wound, which, owing to his feeble nutritive and reparative powers, does not heal, I have traced a red line of inflamed vessels some distance up the skin, starting from the seat of injury and terminating in a circlet of blocked-up capillaries surrounding a blackened patch of skin and tissues. This appear-

ance is evidently caused by diseased matters carried in the circulation, producing blocking-up of the vessels of another part; indeed, the vessels of this red area can be seen, on microscopical examination, to be choked by agglomerations of corpuscles and corpuscular débris, whilst the blackened and shrunken tissue comprised within the outer red line is due to the retained and altered venous blood. In some cases it would appear as if the parts beneath the skin were first affected, judging from the very advanced degree of decomposition which they present when the outer black skin has been removed.

The similarity of appearances between these instances where an antecedent source of diseased matters in the circulation is evident, and those where no such source can be detected, leads to the conclusion that in both the same cause is at the bottom, viz., blocking of the vessels in a definite area, and death of the parts so included. A section through the 'local gangrene' shows, in the centre, blackened skin and sloughing cellular tissue with the remains of vessels and altered blood; outside these are the blocked-up capillaries, passing gradually into the healthy tissues. In those cases where the sudden advent of a black patch appears so unexpectedly, it is probable that the deeper parts have been the first affected, and that the local death has proceeded from the deep parts to the surface. What the change in the blood is which effects these local interruptions can only be surmised, for this is a field of psychological science as yet only imperfectly investigated, though it is certain that in some forms of insanity the composition of the blood is materially changed: witness its peculiarly plastic nature in epileptic mania, where wounds of the greatest extent heal with surprising rapidity; and in recurrent mania, where I have often found at the period of exacerbation of the attack what appeared to me an increased number of corpuscles. Where the nerve-power is so reduced as we see it in paralytic dementia, and where the circulation is torpid from incapability of taking exercise, whilst, from diarrhœa and inability to take food, the nutrition, primarily of the blood, and secondarily of all the tissues, is interfered with, there is more than probability that the vitality of the blood is impaired, and that partial decomposition of it occurs during life. The position of these 'local gangrenes' must be borne in mind—they occur on the *front* surface of the body, where no pressure can have been exerted, as well as on those parts which, when subjected to pressure, are the seat of true bed-sores; thus I have noted them on the dorsum of the foot, on the anterior surface of the leg and

thigh, on the chest and abdomen, over the right trochanter when the patient has been lying all the time on the left trochanter, and also in those who have been out of bed during the day.

It is often said that bed-sores imply bad nursing, and many superintendents of asylums take credit to themselves on the rarity or complete absence of bed-sores in their patients. Some say, on the other hand, that it is impossible to prevent them. I think that the two kinds of sores I have attempted to describe have been confounded; and that whilst it is quite possible to prevent the one, it is equally impossible to prevent the other. It is not in every asylum that extreme cases of hopeless paralytic dementia are seen. In those which are for acute, i.e. recent cases, an instance may never come under notice; but in institutions like this asylum,* where the very feeblest from the workhouses, and the most debilitated from the East-end of London are admitted, the best opportunities for distinguishing the two are afforded. By a careful and early use of water-cushions (not water-beds, which from my experience have a tendency to throw the legs up, and thus to promote permanent contractions of the lower limbs), by using preparations of tannin or collodion, by care in keeping the patient dry, and by frequent changes of posture, the chances of a true bed-sore are reduced to a minimum; but it is, I repeat, impossible, notwithstanding the best and most diligent nursing, to ward off these 'local gangrenes' in all cases. I believe them to be found also on fever and small-pox patients, and to be produced in a similar manner.

The best treatment is to cut out the 'patch' as soon as possible, and all the underlying dead tissue, down to the muscle if necessary, and to fill the cavity thus produced with 'marine lint,' which is both stimulant and antiseptic; in a short time granulations form, and if the edges are brought closely together by plaster, a cure may be effected.

Article XVIII.—*Case of Fibroid Polypus of the Uterus, complicated with complete inversion. Reduction of the inverted Uterus.* By Albert F. Field.

Ann Newman, æt. 37, a small thin woman, much blanched, was admitted into St. Bartholomew's Hospital on August 1, 1872, for a tumour protruding from the vulva. The tumour proved to be a large fibroid polypus, attached to the fundus of a completely inverted uterus.

* Metropolitan District Asylum, Leavesden.

She had been married eleven years, had two children, no miscarriages, last child at full term, seven years ago. Labours good.

Catamenia appeared at sixteen, and from their commencement have been quite regular till last Christmas, even during suckling, but not during pregnancy. Her habit has been every four weeks, for 3–4 days, moderate quantity and but little pain. But since she weaned her last child, 6½ years ago, she thinks her periods have extended over 6–7 days, instead of 3–4, though the total loss has not been much increased.

Fifteen months ago (May 1871) a tumour presented at the vulva, and on two or three occasions it was returned by a medical man who told her it was her womb. Since this time she has suffered great pain in her back, and bearing down at her periods.

Last Christmas she had a profuse loss of blood lasting for nine days with great pain, two or three days before her expected period. No history of bodily or mental disturbance to account for it. She was attended by a medical man and examined per vaginam. He made no particular remarks, prescribed for her and she got well. From this date the catamenia became more frequent and more profuse. In May she flooded again for fourteen days. She was attended by the same gentleman, who did not examine her this time, and after it was over she went in June to the Soho Dispensary, when she was told that there was probably a tumour in her womb, and advised to come in, but she declined, and after four weeks' attendance further aid was refused unless she would become an inpatient.

She was taken ill with pains in her back and hypogastrium, like labour-pains, on July 30. They continued till the night of the 31st, when they abated somewhat, but at 3 A.M. on August 1 the pains returned, and a tumour was suddenly expelled from the vagina. She was sent to the hospital in a cab in the evening and admitted, rather exhausted. She said whilst the pains lasted she felt sick and faint occasionally, but the expulsion of the tumour was attended by no loss of blood; and further, from her last flooding in May, till her admission here, a period of 10–12 weeks, she had had no loss, but only now and then a slight red stain upon her linen.

On examination a body ovoid in shape, smooth, shiny, hard and painless, about 7 in. long by 4 in. wide, was seen protruding from the vulva. It had no pedicle, but was quite sessile upon

what was clearly demonstrated to be the fundus of the uterus, which was completely inverted but not extruded, though it could be readily seen upon pulling gently at the tumour. Dr. Greenhalgh removed the tumour with the écraseur without difficulty. A small flap of mucous membrane was detached from the polypus and attached over the bleeding surface of the uterus by a few sutures, to restrain the hæmorrhage. The tumour weighed 21 ozs.

After removal of the growth, the inverted uterus could be distinctly made out; it was 2½ in. long from fundus to os, the ring of which could be felt firmly contracted. The uterine surface was red and congested and very hard, but not very painful.

There was no great hæmorrhage. The vagina was plugged with cotton wool. No attempt was made to reduce the uterus.

August 2.—No untoward symptom—no pain or hæmorrhage. Plug removed and vagina syringed out with a solution of Condy. She progressed favourably for the next few days, a free purulent secretion being established.

August 6.—Sutures removed and an attempt made by Dr. Greenhalgh to reduce the inversion. The patient was put under chloroform. One hand was placed on the hypogastrium as a point d'appui, and the other introduced into the vagina. The uterus was grasped firmly, compressed as much as possible, and pressed upwards in the direction of the os, steadily for ten minutes. The cup-like depression of the organ could be felt well through the abdominal wall, and two fingers could be inserted into it. The uterus did not seem returnable, the os being firm and rigid, and the fundus very hard. An india-rubber circular air-ring, about 3 in. in diameter, was introduced, and a circular air-bag put in afterwards. The bag was removed in the evening as it gave her much pain. The ring was kept in as a support to the uterus till the 13th, when a similar attempt was made but with no result, and the air-bag was again introduced and inflated.

August 14.—Bag found collapsed. Uterus in the same condition. Vagina well syringed with Condy. The bag re-introduced and inflated, the stop-cock being plugged to prevent the escape of air, as it was suspected that the patient herself turned the tap.

August 15.—Bag remains in, but has collapsed. A leak was discovered and mended. Uterus as before. Abundant purulent discharge has continued from the first. No hæmorrhage or pain unless she flexes her body. Attempts were made

by me to reduce the organ, and kept up for about fifteen minutes. The uterus seemed to return a little within the os. Bag re-introduced and inflated.

August 19.—The same condition of things. The bag has been kept in for the last four days, and she has been syringed, as well as the presence of the bag would admit, with Condy's fluid. There is an abundant purulent discharge. The uterus being in exactly the same position, it was resolved to make another attempt to reduce it.

As she had lost no blood since the operation, and the cervix seemed very rigid, I determined to deplete the part to make it more dilatable. About fifteen punctures were made, and the blood was allowed to flow, but it did not come freely; about 1½ oz. was obtained. The neck was well kneaded, and blood pressed out, and steady pressure was kept up for about fifteen minutes, but the uterus would not go quite back, the hard fundus resisting all efforts. Still the uterus was returned till the fundus was nearly within the os; the bag was re-introduced and inflated to its fullest, and it was resolved to leave it in for a while.

August 26.—She had some pain yesterday, but not of any marked character. The discharge is profuse and offensive. Bag removed. The uterus found reduced; the sound passing 3 in. in normal direction. Os, patulous; cervix, thick and firm; uterus, freely moveable. No depression of fundus can be felt through abdominal walls.

Observations.—This case is interesting, not so much from the treatment adopted as from illustrating the possibility of re-inversion of a uterus that is in a fibroid condition.

On referring to records of obstetric cases for the last thirty years, I have failed to find any like the present. There are constant references to partial inversion from polypus, but no case of reduction of a completely inverted fibroid uterus. Thomas, in his 'Diseases of Women,' p. 343, refers to one in which 'Velpeau, after the removal of a polypus attached to an inverted uterus, was completely foiled in restoring it, and the patient died from peritonitis.—Bécquerel, p. 306.'

The present case seems therefore unique.

Then a question arises, was the inversion acute or chronic? Inasmuch as this makes a material difference in the probability of reduction.

Circumstances point rather to its being acute, though no point of time can be absolutely referred to as the moment when the accident occurred. It seems reasonable to infer:—

that after her last flooding in May the tumour came down and plugged up the os uteri, for, for 10–12 weeks she had no hæmorrhage. On July 30 labour pains set in, and terminated on Aug. 1 in the expulsion of the tumour, which in its descent dragged down the fundus and inverted the uterus. This is the more reasonable when it is considered that the tumour was sessile upon the fundus, and that during the whole of this latter 12 weeks she had no constipation or disturbed micturition, in addition to no hæmorrhage. So large a body as this tumour could not have been long in the vagina without giving rise to some such symptoms.

Compared with Dr. Tyler Smith's * case of 12 years' and Dr. Noeggarath's † of 13 years' standing, this one would be of little use in calculating the chances of reduction of inverted uteri. But another element than that of time comes into the consideration—the fibroid condition; and, moreover, sufficient time had elapsed for the organ to become firmly contracted, rendering it à priori as hopeless as theirs seemed to be. And indeed opinions were strongly expressed as to the scant chance of success following any curative attempts. But the consideration of the several instances in which such efforts were successful taught that even with such a condition as fibroid change, the case ought not to be abandoned as hopeless too early.

The method of treatment was practically the same as that adopted in all the recorded cases. The principle of constant even pressure of the organ against its neck was followed out, and the gain by manipulation was maintained by an air bag in the vagina.

Various ways of making pressure upon the uterus have been used. The hand recommends itself as being the safest, as any laceration of structure would be detected at once. Dr. White,‡ of Buffalo, made pressure by a large bougie. Dr. B. Hicks § has lately used the cup-shaped end of an old fashioned stethoscope. Dr. Noeggarath ‖ made pressure at one cornu, and as it were doubled the uterus lengthways upon itself. Dr. Tyler Smith ¶ kneaded the uterus for ten minutes night and morning, no chloroform being given, in the meantime keeping up pressure by air bags, and after eight days manipulation the uterus returned.

* 'Proceedings of Royal Med. and Chir. Soc.,' April 24, 1858.
† 'American Med. Times,' April 21, 1862.
‡ 'American Jour. of Med. Science,' July 1868.
§ 'British Med. Journal,' August 31, 1872.
‖ 'American Med. Times,' April 21, 1862.
¶ 'Proceedings of Royal Med. and Chir. Soc.,' April 24, 1858.

Dr. Thomas,* in a chronic case of twenty-one months' standing, pressed the cervix against the abdominal wall, cut down upon it through the median abdominal line, ascertained by his finger that there were no adhesions, inserted a steel dilator like a glove-stretcher into the cervix and expanded it; contraction returned after its removal, but the organ was reduced. The patient recovered. At first he tried in this case incision of the cervix, but it bled so much the wound had to be stitched up.† In another case he inserted a plug of boxwood, with a handle a foot long, into the cervical ring through the abdominal walls, and then made pressure on the fundus, with success after three hours.

The question of how long at one time efforts at reduction should be maintained must be left to the judgment of the operator, and in the case now reported a short period was adopted as the rule. Dr. White continued his manipulations three-and-a-half hours and reduced the uterus. Dr. Thomas,‡ in a case of six months' standing, continued his for three hours and fifty minutes and reduced the inversion. In another, of four years' standing, he succeeded at the third attempt after three hours' kneading and pressure. These periods are very long, but they were followed by no ill result. The great dangers to be apprehended from too long and too forcible efforts are laceration at the time and peritonitis afterwards.

Though long manipulation has been borne well in many cases, in some a short one has proved nearly fatal. In Dr. B. Hicks'§ two cases collapse came on, in one case in half-an-hour, and in the second still earlier. But, considering the great importance to the future of the woman that the uterus should be restored, some risk may be justifiable to save her from amputation and its dangers.

With regard to incision of the cervix, which was followed by so much hæmorrhage in Thomas's case, might not a number of small incisions, such as were made in the one now reported, answer the same purpose? The amount of yielding from fifteen to twenty small longitudinal cuts would be greater than from one longer and deeper, and would be without the risks of this. In this instance the punctures seemed to do good by depletion and allowing the cervical fibres to separate and give way.

In conclusion, it seems, from the number of apparently

* 'Biennial Retrosp. of Med. and Surg.,' 1869–70.
† Ibid. ‡ 'New Sydenham Society's Biennial Retros.,' 1869–70.
§ 'British Med. Journal,' August 31, 1872.

desperate chronic cases that have been cured, that the reduction of an inverted uterus should not be despaired of till patient and long-continued attempts show that it is hopeless.

There are cases on record where uteri are said to have spontaneously returned, but great doubts are by many attached to the accuracy of the observations. Those to which I refer are noted in Ramsbotham's 'Obstetric Med.,' pp. 458–9, foot-note, and Dr. R. vouches for the accuracy of one from his own personal knowledge. He at the same time mentions one observed by Drs. Meigs and Hodge, which righted itself after two years' inversion; also another, observed by Drs. Meigs and Lewis, after many months. There are also four others referred to. In Newnham's Essay on Inversio Uteri, p. 10, there are two additional cases; one righted itself after eight months and the other after eight years. Following this comes the statement that Rousset had a case where the uterus sloughed away after six years' inversion, and recovery ensued.

It seems impossible that a completely inverted uterus should restore itself. How can it? By the contraction of its own longitudinal fibres, and those of the Fallopian tubes dragging its cornua inwards and upwards?

However, these cases ought not to be taken as just grounds for neglect of treatment; and the success in the one now put on record, will be additional encouragement to perseverance.

Article XIX.—*Two Cases of Popliteal Aneurysm cured, one by Pressure, the other by Genuflexion combined with Pressure.* By Luther Holden.

DANIEL W. MURPHY, æt. 27, was admitted into Pitcairn Ward on January 25, 1872, with a pulsating tumour about the size of a small orange in the popliteal space of the left leg. There could be no doubt as to the nature of the tumour. It had all the well-marked characters of an aneurysm.

History.—He says that the left leg has not been so strong as the other since he fell and broke it just above the ankle, about a year and a half ago. About five weeks ago, he noticed for the first time a stiffness and pain at the back of his left knee. He has no hesitation in ascribing this to the 'Tichborne case,'

in which he was engaged as a reporter for the press, three hours a day for two months, sitting in a very cramped position with his leg bent under him. A fortnight previous to his admission, the swelling began to bulge in the ham and caused him such rapidly increasing pain that he was compelled to give up work and seek relief in the hospital.

As the pulsation in the aneurysm could be completely stopped by pressure over the femoral artery at the groin, and as our patient was of a quiet temperament, exceedingly intelligent and ready to lend us every assistance, we resolved to attempt a cure by digital compression.

The house-surgeon, Mr. W. Furner, enlisted all the dressers in the cause, and secured the services of some expert volunteers as a reserve. To the unremitting vigilance and skill of all these gentlemen the patient owes his cure.

January 30.—The limb being slightly bent, the groin well powdered with starch, and protected by a layer of German tinder, finger pressure on the artery was commenced at 4 P.M. We soon found that the fingers tired too soon, and became unequal to the continuous and effective application of the necessary pressure. Therefore we devised a plan of assisting the fingers by superimposing a weight upon their ends. The weight consisted of a long slender bag, filled with twelve pounds of shot. By this means we saved muscular force, and enabled the fingers to act for nearly two continuous hours, without any fatigue or inconvenience except a little numbness over the nails. Every two hours the dresser was relieved, and a fresh hand was applied as quickly as possible.

After twelve hours' pressure the aneurysm was smaller, harder, and pulsated slightly during the change of hands. A quarter of a grain of the acetate of morphia was injected into the arm, not because the patient was in pain, but to induce sleep.

After seventeen hours' pressure, the aneurysm was still more reduced in size, and its pulsation still more feeble. The patient began to feel sore at the seat of pressure, and a numbness down the leg. He felt very faint too and tired. The leg was wrapped in cotton-wool and a little brandy and water given to him at more frequent intervals. He had taken a little occasionally since the pressure began.

At 10 P.M., that is, after thirty hours of continuous pressure, the aneurysm had become much smaller, harder, and had entirely ceased to pulsate. The pressure was therefore discontinued.

When released from all restraint he had four hours of natural sleep, but awaked at 2 A.M. with pain in the knee. This was relieved by a change of position, and he was sent to sleep again with one-third of a grain of morphia injected subcutaneously.

For twenty-six hours after the discontinuance of pressure at the groin, the aneurysm seemed to be cured. There was no perceptible pulsation in it. All parties concerned were rejoicing at the successful issue of the case. But they were triumphant too soon.

About 11 P.M. on February 1, there was a slight return of pulsation; and this pulsation was still more perceptible on the morning of the 2nd. Digital pressure, with a superimposed weight of nine pounds, was therefore resumed at 11.30 A.M.

At 4.30 P.M. it became necessary to increase the weight over the fingers to twelve pounds, in order effectually to control the pulsation.

On the morning of the 3rd, we found our patient could no longer endure the requisite pressure at the groin, in consequence of the great tenderness and swelling of the part compressed. Therefore, at 10 P.M. we gave up digital pressure and applied Signoroni's tourniquet a little below the crural arch. The tourniquet was kept in action till 2.30 P.M. on the 4th, a period of sixteen hours and a half. We then removed the tourniquet, and found that all pulsation in the aneurysm had ceased.

On the 5th, as there was a doubt about the complete absence of pulsation, the tourniquet was re-applied at 11 A.M. and kept in action, with intervals of relaxation, until 10 P.M. on the 6th, a period of thirty-five hours.

From this time the progress of the case was in every respect satisfactory. The aneurysm became less and harder daily. We could distinctly feel the beating of the enlarged collateral arteries—the anastomica magna, and two considerable vessels, probably the sural, running one on each side of the popliteal space.

It should be mentioned that a small slough took place where the tourniquet had pressed. In our anxiety to complete the cure, we had probably applied our pressure in the second instance longer than was necessary. A slight redness and tenderness, which appeared over the inner ankle, soon passed off.

Towards the end of February, the patient was allowed to get up and walk about. Soon after he left the hospital, quite fit to resume his occupation.

September 12.—Our patient called to see me. He is quite

well, and has been constantly at work since he left the hospital, now six months ago. Not a vestige remains of the aneurysm. The collateral circulation about the knee is very perceptible; so also are the pulsations of the anterior and posterior tibial arteries.

The lesson to be learnt from the preceding case, is, I think, that we left off pressure in the first instance too soon. Had it been kept up for forty hours instead of thirty, we should in all probability have spared our patient and ourselves much trouble and anxiety, by an earlier completion of the cure.

Case II.—*Popliteal Aneurysm cured by a combination of Pressure and Genuflexion.*

Cyrus Collett, æt. 33, a spare healthy-looking man, was admitted into Pitcairn Ward on March 26, 1872, with a well-marked popliteal aneurysm in the left leg, about the size of a closed fist.

History.—About four or five months ago he first noticed a stiffness in the left knee, which came on gradually, and which he thought was rheumatic. Soon afterwards he discovered a swelling in the ham. This soon increased in size, and became at times very painful. He cannot in any way account for the swelling, but states that he has been in the habit of bending his knees a great deal, and sometimes to the very utmost, at his business, which is that of a paper-hanger and decorator.

The aneurysmal sac was filled chiefly by fluid blood. It could be reduced in size by direct pressure. Its pulsation could be easily stopped by pressure at the groin. Flexion of the knee, also, to an acute angle controlled pulsation; flexion pushed to the extreme stopped it entirely.

For these reasons, we thought this was a fair case to attempt a cure by simple flexion of the knee. The object in view was explained to the patient, who was quite ready to help us in every way.

The treatment was commenced on April 1. The knee was bent to the utmost, and kept so by a bandage bracing the foot to the thigh. The flexion was kept up for seven days, with the exception of a slight relaxation of the bandage every day for four or five hours. Patient bore the treatment well. He said that his leg was not particularly painful, but very uneasy from restraint, and that his rest was impaired by it.

On the seventh day we examined the aneurysm. It was reduced by at least two-thirds in size, and much harder; still there was a slight pulsation in it, but we found that a very little pressure at the upper part of the thigh was sufficient to stop all pulsation. Accordingly, not objecting to interfere with the purity of the treatment, we thought it desirable to combine with genuflexion a little pressure in Scarpa's triangle for about ten hours every day. This plan was continued for a week, and during the greater part of the time the patient was taught the control of both bandage and tourniquet.

The result of this combined proceeding was completely successful. The tumour ceased to pulsate, diminished obviously in size, and became harder from day to day.

We relaxed the bandages, and permitted the extension of the knee by degrees.

In about a month from the beginning of the treatment the bandage was removed entirely; but the patient was kept in bed for a fortnight longer, in consequence of a slight effusion into the synovial membrane of the knee, the result of the long-continued flexion.

When permitted to get up and walk about, the patient found he could do so without pain or any inconvenience. No trace of the aneurysm remained, except a small hard tumour at the bottom of the ham. Two vessels, probably the enlarged sural arteries, could be felt pulsating behind the knee, and the enlarged anastomica magna on the inner side of it.

During the treatment the patient was kept upon the following diet:—

Morning—1 pint of tea, bread and butter.
11 a.m. 1 pint of arrowroot and milk.
1 p.m. 1 pint of beef-tea and bread.
4 p.m. 1 pint of tea, bread and butter.
8 p.m. a little milk or beef-tea.

The patient was discharged in all respects well, and has continued actively at work up to the present time, four months and a half since his discharge.

Article XX.—*On the Nature and Treatment of Porrigo decalvans (Area Celsi).** By Dyce Duckworth, M.D. Edin.

I HAVE been induced to study the intimate nature of this peculiar disease, because within the past few years I have had to treat a considerable number of cases of it, and also because some conflicting opinions are still prevalent regarding its morbid anatomy.

It is only right, however, to remark at once, that much light has been thrown upon the subject during the last twelve or fifteen years, and chiefly by the recorded clinical and histological experiences of Jenner,† Hutchinson,‡ Rindfleisch,§ Bristowe,‖ and Duhring.¶

I believe it is not too much to assert, that the whole question of the pathology of porrigo decalvans, so far from being rendered comprehensible and simple by the alleged discovery of Gruby, that a parasitic plant—the Microsporon Audouini—was at the bottom of the mischief, was in reality grievously complicated. Be this as it may, the parasitic theory was so far adopted, or taken for granted, that but few observers were sufficiently interested to study the matter further for themselves.

At the present time I think the supporters of the parasitic origin of area Celsi are in the minority. Some teachers hold this view, and also believe that the disease may result from neurosis. Such a faith naturally overcomes all difficulties. Although the description of the disorder is given with sufficient clearness by Celsus and most subsequent writers, still there may be present in some cases a source of difficulty in forming a correct diagnosis, and it is this—true parasitic ringworm (Tinea tonsurans) may accompany the Porrigo decalvans.

When this complication occurs, it is not surprising that true fungous elements are found by means of the microscope. In

* 'Celsus de Re Medicâ,' lib. vi. cap. iv.

† 'Med. Times and Gazette,' December 1857, p. 650.

‡ 'Pathological Soc. Trans.,' vol. vi. p. 380, vol. xiii. p. 265. 'Med. Times and Gazette,' February 1858.

§ 'Area Celsi.' Histologische Studie von Prof. Dr. Rindfleisch in Bonn. (Mit Taf. iv.) Archiv für Dermatologie und Syphilis (4. Heft).

‖ 'St. Thomas' Hospital Reports,' vol. i. 1870.

¶ 'Pathology of Alopecia areata.' By L. A. Duhring, M.D., of Philadelphia. 'American Journal of Medical Science,' July 1870.

one of my cases a patch of Tinea tonsurans on the right parietal region was followed immediately by a patch of area on the corresponding region on the left side. Careful observation will show that parasitic ringworm does not really denude the affected parts in the same manner as Porrigo decalvans; the hairs do not fall out from their follicles and leave smooth plots, as is the case in the latter affection, but they break off and leave the surface of the scalp rough, discoloured, and apparently dirty. I have for some time past been in the habit of taking notes of every case of Porrigo decalvans which has come before me. I have also examined the hairs in almost every case microscopically, and have paid particular attention to the state of the patches and their vicinity. In some instances the examinations of individual hairs have extended over days and weeks.

The disease is sufficiently common in London practice. Out of a total of 3,100 patients, 70 cases have come for treatment to the Skin Clinique of St. Bartholomew's Hospital during the last three years. In the same period almost the same number of cases of Tinea tonsurans have presented themselves. In Glasgow Dr. McCall Anderson* met with 153 cases in 10,000 dispensary 'skin' patients, and with 44 in 1,000 private cases of skin diseases.

Dr. Begbie informs me that in Edinburgh the disease is by no means uncommon. He has met with it in hospital practice, but more frequently amongst the better classes.

In Dublin, Dr. Walter Smith met with only two cases in 1,100 hospital 'skin' patients.†

I have particularly noticed that many of the children affected were pallid and ill-nourished. The cervical lymphatic glands were frequently enlarged. I think I can corroborate Mr. Jonathan Hutchinson's observation that the majority of the patients are lean, and by far the greater number were persons of dark complexion with dark hair.

Most writers have accurately described the appearances presented by the disease. Ths distinctive features in the case are the smooth and sharply-defined bald patches, and the thinning of the scalp in the affected area. The apparent suddenness of their formation is likewise characteristic. The tendency to spread, oftentimes by enlarging their entire margins, the round or oval form of the patch being maintained;

* 'Lancet,' 1871.

† Analysis of 1,100 cases of Skin Disease. 'Dublin Quarterly Journal of Med. Science,' November 1871.

the appearance of similar patches, sometimes almost in symmetrical apposition, most often, however, not so; the occurrence of fresh centres of baldness in other regions of the scalp or face, all tend to justify the expression of Celsus as to the form of the area—'Sub quâlibet figurâ dilatatur.'

Bateman called attention to the remarkably white appearance of the bald plots. This is not always manifest, however. There is a decided thinning of the integument, and this is clearly due to the degree of atrophy of the air-bulbs and their sacs. If the finger be passed over the patches it is felt to rise when the unaffected hairy border is reached, and a greater plumpness of integument is at once distinguished here. The baldness (pro tempore) in Porrigo decalvans simply resembles that met with in the senile scalp, where the same result is only gradually arrived at: the hair-sacs are atrophied, and a glossy thin integument closely invests the pericranium.

I have never witnessed any redness due to vascular excitement, or any desquamation upon the denuded area, nor have I observed any noteworthy change in their sensibility to different impressions.

The most recent, and at the same time the best descriptions of Porrigo decalvans, are those given by Drs. Bristowe and Duhring in the essays already referred to. I had been engaged with my examinations for some time before their writings came into my hands, and it was with peculiar satisfaction that I found my results to agree so closely with theirs. Since that time I have repeatedly gone over the same ground, and have been enabled to work by the additional light these writers have thrown upon the subject.

I proceed now to record the results of my examination of hairs removed from the affected area. The majority of observers have directed their attention to the long hairs growing at the margins of the patches. As will be shown, however, it is of much more importance to study certain short broken hairs, which may in nearly every case be found upon the bald plots, most commonly near their margins. They have been described as club-shaped, but their peculiarity consists in their gradual expansion towards their free (broken) extremity. They are depicted in Plate II. fig. 1, about twice their natural size. It is of the first importance to study the minute characters of these stumpy hairs in order to unravel the exact nature of the disorder, for they manifestly represent some of the most marked consequences of the morbid process.

The free end of these hairs is seen to be fuller and darker than the portion of the axis near the scalp. In fair persons it is not easy to find them; but they are seen to present the same characters as in the cases of dark people. They are removed very readily by means of a forceps, and, as a rule, bring no elements of their root-sheaths with them. The long hairs at the margin are sometimes easily removable, and come out without their root-sheaths; or they may be firmly implanted and incapable of extraction without tearing away their sheaths. They are especially apt to curl up at the roots when traction has been made upon them with the forceps. (Plate II. fig. 2.)

I have subjected hairs from all parts of the affected area to microscopic examination.

In the first instance no re-agent was employed, water only being added. I next introduced a weak solution of caustic potass, and not unfrequently glycerine was used. With a view to the detection of fungous elements, the hairs were first washed in a very weak solution of potass, then transferred for days (sometimes as many as ten) into pure ether, in which they were agitated and macerated.

There can, I think, be no doubt that Bristowe's and Duhring's explanation of the appearances presented by the club-shaped hairs is correct. They are the stumps left in consequence of the fracture of long hairs, and the break occurs at the weakest point in the shaft, which is found to be swollen.

These hairs are shown in Plate II. fig. 3, also in Plate III. fig. 2, highly magnified. The dark free end is seen to be fibrous and brush-like, this appearance being due to fracture sustained by the traction of a comb or otherwise. The tapering extremity represents the atrophied root as withdrawn from its follicle, for which it was rapidly becoming too small. As a rule, and as already remarked, no particles of the root-sheath come out with these hairs. The adjacent long hairs present many of the characters of the stumpy ones. They can often be extracted with ease. Towards their insertion (if the expression may be allowed) into the scalp they are seen to become pale and tapering, and one or two knots or exuberances may sometimes be found above the narrowed portion. In some instances bundles of such hairs come out with the slightest traction.

Amongst these, and sometimes in small islets upon the bald patches, may be found coarse hairs, firmly implanted, evidently

unaffected by the morbid process so far as the atrophic results are concerned. These hairs when torn out bring portions of their root-sheaths and follicular linings with them. Many of the long hairs, although much atrophied, come out with particles of their sheaths and sacs adherent. This has been denied by some observers, but I have no doubt of the fact.

Such hairs as are about to fall have probably but slender attachments to their follicles, and become, as it were, loose in their sockets. It is not the case, however, that the marginal hairs are always easy of removal; I have frequently found them quite firm, and showing no signs of disease. The bald plot in such cases is perhaps not extending; new downy hairs may even be returning in some places; the morbid process has ceased, and the hair-forming functions have not thoroughly recommenced. Sometimes broken hairs may be found in the midst of an actively-growing crop of new lanugo, and thus both the degenerative and recuperative processes may be seen going on side by side.

I proceed now to describe in detail the microscopical appearances both of the broken and of the long hairs from the patches and their vicinity.

With a magnifying power of about 80 or 100 diameters it is clearly seen that the free end has been fractured; it presents a fibrous, brush-like extremity. The upper third of the hair is darker and larger than the lower two-thirds, and an ampullary swelling or bulbosity is met with in this portion. It is obvious in many instances that the line of fracture has occurred across a similar exuberance. Intermixed with the fibrous projections there is much dark granular matter, and there appears to be more of this in the constricted part of the shaft below, also in the secondary swelling, if there be one. Below this point the hair becomes paler and narrower. Sometimes a fracture is seen in the contour of one of the swellings, and fibres protrude from this point. (Vide Plates I. and II. fig. 3; Plate III. fig. 2.) The root is a little swelled at its upper portion, and subsequently tapers. The swellings or knots are not always to be met with; instead there may be found an increase of pigmentary matter, and an appearance of dark, air-containing spaces towards the free end; and the latter may not always present the frayed-out or fibrous aspect already described. Duhring believes that the contracted appearance of the fractured extremity, which is certainly often met with, is due to the elasticity of the epidermis of the hair which holds the free filaments together.

As will be described later, sulphuric acid causes expansion of the contracted and broken fibres. Towards the root the shaft becomes pale, and if the sheath, or part of it, is attached, there may not be much change apparent in the structures removed with the hair.

When more highly magnified, the same appearances just described may be more distinctly seen. The fibre-cells are seen to protrude from the fractured end, and a large amount of dark granular matter is found pervading the shaft at its upper third. The swellings especially are full of this. (Both weak solutions of potass and of glycerine are of use in rendering the various structures more clear.)

In the swellings the most profound change would appear to have occurred in the medullary portion of the shaft, but it is not usual to find medullary structures in hairs from the scalp; they are best seen in grey hairs, or in those taken from the beard.* However this may be, there is an appearance in many affected hairs which recalls that of medullary cells, altered certainly, and as if having undergone proliferation or granular degeneration. Dr. Bristowe, I find, has remarked that 'this appearance seems to be due to rounded or somewhat convoluted masses of cells, often containing or mixed with fatty matter, which represent apparently a superabundant development of the small oval groups of cells which occasionally, even in healthy hairs, stud the axis of the shaft at intervals.' †

The change does occur, I believe, in the medullary cells sometimes; but most commonly it is met with in the course of the shaft. The fibre-cells appear to be expanded, or less firmly bound together in the dilatations, and thus spaces or interstices are formed within them. Duhring believes that 'the filaments not being sustained as usual, and losing their vitality, tend to separate and disintegrate, thus stretching the epidermic membrane.'

The appearances disclosed on adding solution of potass to these hair-stumps are depicted in Plate III. fig. 2. Abundant dark granular matter is seen to exude from the free end of a swelling that has been fractured.

Thus there are at least two elements in the production of the altered contour and colour of the hair, viz., loose apposition of the fibre-cells, with, perhaps, diminished binding power of the epidermis, and an excessive granulo-pigmentary formation.

* Vid. Biesiadecki's article on Hair in Stricker's 'Manual of Histology.' New Syd. Soc. Trans. By H. Power. Medullary structure is shown in Plate i. Fig. 1.

† 'Loc. cit.,' p. 180.

This latter material has been described by some observers as an accumulation of the minute stromal form of the microsporon fungus. No trace of any parasitic structures is apparent under high powers.

Attached to many of the hairs are epithelial scales and sebaceous particles, but hardly more, I think, than accompany hairs from healthy situations. As will be shown later, Rindfleisch has made assertions to the contrary.

In the long hairs which may be pulled out from the margins, or sometimes from the centres of the areæ, the contour of the shaft is observed to vary very much.

Occasionally the hairs are darker and coarser than those of the scalp generally; sometimes they appear as if twisted several times upon their axes. As a rule, they vary in diameter for an inch or two above their roots, being alternately wider and narrower, and having irregular distribution of pigment in their course. Towards the root, one or more of the ampullations, already described as found in the hair-stumps, may be observed in many instances.

Healthy hairs may often be found in the immediate vicinity of affected ones, and false impressions may be gathered from examinations of such alone. In some of these long hairs the shafts taper towards their roots, and become more or less devoid of pigment. Such specimens come out easily, and are manifestly on the point of being shed from their sacs. No change is especially noteworthy in the roots and bulbs; the appearance exactly resembling that of hairs which are ordinarily combed out of healthy heads, that is, there is atrophy of the bulbs, with brush-like or tufted ends. (Plate I. figs. 1 and 2.)

In the instances in which ampullary swellings are found near the root, a concentration of granulo-pigmentary matter is found in them, and there are patches of adherent follicular and sebaceous structures around the shaft. Below the swelling a constriction is apparent, which again passes into the deeper bulb-elements immediately above the papillæ at the bases of the sacs. These appearances are shown in the woodcut at page 156, where I have introduced the drawing for another purpose. In the case of hairs from the eyebrows affected with the disease, these changes may be more distinctly studied than in those taken from the scalp. If such a hair as has just been described, continues to grow, the parts below the swelling are poorly formed and void of pigment. This change is due to atrophy of the bulb and root. If the swollen portion is carried up a little way by the advance of the shaft, it is apt to be the site of fracture at the first opportunity.

I must now describe the effects produced by certain re-agents when applied to these hairs, with a view to determine further the intimate nature of the changes in them, and especially to ascertain the presence or absence of parasitic fungous elements.

In the examination of all epidermic appendages, it is usual to employ solution of potass, and all who have investigated the affected hairs in Porrigo decalvans have made use of it. If applied in too concentrated a form, its action both upon hairs and their follicular investments is powerfully solvent; if a weak solution be added gradually under the cover-slip, the entire shaft is rendered more transparent, and, in particular, the cellular and sebaceous structures, which come from the hair-sacs and are adherent to the lower part of the shaft and root, are very clearly seen. In a few minutes there are manifest innumerable bright refracting granules, closely investing the hair, and especially adhering to the epithelium at the upper part of the bulb. These granules vary somewhat in size, but are mostly rounded or oval. (Plates I. and III., figs. 2 and 3.) Later, the shaft appears as if overgrown with the granules, presenting the aspect of an old tree invested with moss and lichens. If now some ether be introduced under the cover-slip, the granules at once disappear—they are dissolved; however, on the evaporation of the ether they are again deposited, but this time indiscriminately over the whole field. The source of these particles is the sebaceous epithelium removed with the hair.

If glycerine and water be employed no further change is undergone, except that all the structures become more transparent.

I have never failed to see the appearances just described in any hairs removed from a case of Porrigo decalvans; and, what is quite as noteworthy, I have never failed to witness the same changes in healthy hairs taken from any person's head.

These characters of hair, in respect of the action of solutions of potass, ether, and of glycerine, must therefore be accepted as normal.

My examinations have been made in a large number of typical cases of Porrigo decalvans, and I have to aver that I have never seen a single element in any instance that could rightly be termed fungous or parasitic.

I naturally ask why, if this affection be, as is affirmed, due, at all events in certain cases, to a vegetable parasite, have I never had the fortune to meet with it? I have no difficulty in demonstrating at once the parasitic elements in cases of Tinea

versicolor, in Favus, and in Tinea trichophytina, and I therefore refuse to believe that I am so unskilful as to miss them in the case of the so-called *Tinea* decalvans.

The advocates of the parasitic theory insist upon the minute character of of the sporules of the Microsporon Audouini, and others again declare that the mycelium is scanty, and not always indeed to be found.

With a fifth of an inch objective lens upon the microscope, I can detect no fungus spores and no mycelium. At the same time I cannot resist the conviction that some observers have, perhaps from want of due care and prolonged examination (for such investigations are indeed most tedious and greatly tax one's patience), allowed themselves to believe that they saw parasitic elements. The fact that the bright refracting granules to which I have alluded, although fatty, are not easily removable by ether is sufficient to account for the belief that these *sporoids* are really vegetable in nature.

Maceration in pure ether for several days will not remove these particles from the root-sheaths. The appearance of mycelium is certainly imitated to some extent by the swelling of the cuticular scales of the hairs, which are readily seen on altering the focus of the microscope. They traverse the diameter of the shaft and seem to invest it with a pseudo-mycelial web, and amongst these scales, swollen by the action of the potass, are entangled numbers of the granulo-fatty particles. (Plate I. fig. 1.)

I endeavoured at one time to grow the supposed epiphyte by placing the affected hairs in glycerine and water, and upon strips of apple laid upon moist sand. All my experiments failed completely.

In Plate III. fig. 2, there is depicted a hair-stump taken from a dark-haired lad. It is highly magnified, and solution of potass has been added. Immediately on the introduction of the re-agent a mass of dark, granular, and refracting matter began to ooze forth from the ruptured extremity.

In another case, however, the hair-stumps were removed from a fair-haired child æt. 5 years, and similarly treated. The material which exuded was granular and oily, but not dark, owing to the absence of pigment. As soon as this matter is free upon the field, molecular action commences in the particles. If the solution of potass be strong and suddenly placed near the hair, the granules are shot forth in an apparently explosive fashion from the ruptured fibres.

This granular material adds much to the bulk of the knots

or swellings on the hairs. There is not, so far as I know, any special chemical character peculiar to it, and I agree with Bristowe in likening it to the natural pigmentary matter found in normal hair-cells, and which exists, according to Biesiadecki, either in a granular form or more equally diffused throughout them. After the removal of this material, the ruptured ends of the fibre-cells are more distinctly seen.

If the hair-stumps be immersed for some time in solution of carminate of ammonia, no change takes place at the ruptured extremity; only the delicate cells about the root-sheath take up any of it. If they be placed in strong sulphuric acid the fibre-cells split up in a remarkable manner, and form a shaggy fringe both at the broken extremities and along the margins of the hairs; the same is also well seen if a hair happens to have sustained fracture at any point in its contour. This action of sulphuric acid is not so well marked in normal hairs, and it is therefore significant of a looser coherence of the fibre-cells at these weak points.

The oleo-granular matter is hardly demonstrable when the acid is employed as a re-agent, and none of it is seen to emerge from the broken ends as is the case when solution of potass or of glycerine is added.

On Plate IV. fig. 3, is depicted a hair-stump (*a*) which has been cut across at the swollen portion, and also partly divided by a razor a little above this point. The remainder of this hair is seen in Fig. 4 (*b*), where the colourless tapering root is shown, with some cellular particles from the follicle stained by carmine.* This portion had been immersed in carminate of ammonia, and subsequently in glycerine and water.

The bundles of fibre-cells are well disclosed in sections made in this fashion, and a more complete demonstration of their arrangement is secured by placing the preparation in pure sulphuric acid. I am not aware that this method has been previously employed in investigating the morbid anatomy of the hair.

In Fig. 3 (*a*) the appearances have been admirably drawn. The splitting-up of the free ends and borders ensues immediately on applying the acid, and if the dark portions in and near the site of fracture be carefully observed, they are seen to disappear gradually as this powerful re-agent penetrates into

* The nuclei of these cells are normally large, but none were to be seen in the atrophied hair roots. The whole cellular mass, at one point only, seemed to imbibe the carmine.

the interstices of the hair-shaft. (Fig. 2.). Air-bubbles are extruded and the dark spaces clear up. As already stated, the granular matter is indistinctly seen when sulphuric acid is used; no doubt chemical change is exerted upon it, and it is probably broken up and scattered over the field. I had for some time believed that these dark spaces resulted from loose packing of the fibres causing interstices which contained air, and this seems to be proved by the above examination. In recent hair-stumps these spaces are filled with oleo-granular and pigmentary matter, but after various preparations of the hairs have been made this is extruded and lost, and air occupies its place.

It must be remembered that normal hairs contain air in small cavities, and these, as is remarked by Kölliker, simulate the appearance of pigmentary collections. The medulla also contains air.

The elaborate essay of Rindfleisch, already quoted, must now claim our special attention. This writer finds no parasite in the affected hairs, and expresses his belief that the disorder has its origin in diminished nutrition. I shall review the Professor's observations as briefly as possible, and comment upon them as I proceed.

Rindfleisch remarks that in this disease the hair is loose generally over the scalp as well as in the affected areæ. This is, however, only true of certain cases; it is perhaps more frequently the case in severe instances, and in adults, than in the chronic circumscribed form common in children. I think also that this is the case in those examples of alopecia which follow paroxysms of neuralgia. He describes the appearance of the fractured ends of the hairs and of the fatty-granular matter in this locality. He contrasts the site of fracture in Porrigo decalvans with that in Tinea tonsurans, and shows that it is intra-follicular in the first case, and above the level of the scalp in the second.

This is, however, true of such hairs only as break off at weak (degenerated) points within their sacs, and cannot apply either to the scattered, fractured hair-stumps, or to the loose hairs that are shed from their follicles after having become atrophied. He describes an attachment of the root-sheaths to the hairs (extracted from the margins of the affected patches) from the orifices of the sebaceous glands to the fundus of the follicles. I have never been able to satisfy myself of this exact arrangement. He believes that the hair is firmly held in this part of its course in consequence of some altered relation

between its cuticle and its inner root-sheath, while there is simultaneously a diminished energy of growth in the papilla. He describes a broad dark zone, corresponding to a fatty-granular degeneration, as manifest at the lower third of the hair-sac. This spot represents the locality where a normal hair receives its horny coating and vigour, and requires less nutriment than formerly. It is also the point at which the root-sheath enters into relation with the hair, and consequently offers some resistance to its onward progress.

This resistance is overcome in the normal state by the energy of new papillary formation below, and Rindfleisch argues that if this energy has sunk low, i.e., if the papilla produces in a certain time fewer new cells than it should in the normal condition, the onward pressure is diminished, and is insufficient to push on the hair in its proper axis, the block in the follicular duct, already described, adding still further to the difficulty. The new cells accumulate and form, what he terms, a 'pseudo-bulb' or knot between the true bulb and the narrow part of the hair-sac. This, he states, is not quite constant, but is found nine times out of ten. If this pseudo-bulb could be drawn out, it would form a hair two or three times its own length.

I am unable to apply these descriptions to the appearances of the extracted hairs with which I have made myself familiar. The drawing which accompanies Rindfleisch's paper is diagrammatic, and illustrates not what he has actually seen, but what he believes to take place.

The objections I would make to his account of the pathology, which is highly ingenious, and worthy of all attention as coming from so distinguished a histologist, are as follows:—

I have never found a fatty-granular zone in the shaft of affected hairs so far away from the so-called pseudo-bulb, and invariably the latter appears to represent a repetition of the former, a secondary zone or more often a knotty swelling. Rindfleisch describes three processes: first, the altered relation between the hair-cuticle and the inner root-sheath; secondly, the fatty-granular zone of degeneration near the root; and thirdly, the formation of a swelling near the bulb (accumulated new cells).

As to the constriction within the follicles, I must express my ignorance, for it has not occurred to me to observe the effects of it; and, of course, it is not actually demonstrable. I believe, moreover, that the zone of degeneration represents almost, if not altogether, the essence of the malady, and that it

is the result of the morbid influence that was exerted at the time that particular portion of the hair was in course of formation.

A secondary zone or swelling represents a secondary submission to the same influence, or a repetition of the process manifesting itself lower down on the shaft because of its later production. These zones or swellings, as the case may be, are carried up with the advancing shaft (for it does advance in many instances), and sometimes do not break till the hairs have grown several lines above the level of the scalp. The subsequent atrophy of the root is not alluded to by Rindfleisch, and yet it is a very marked feature of the morbid anatomy of Porrigo decalvans. It has occurred to me that the distinguished Bonn Professor has studied such hairs as have been affected in a very early stage of the disorder. I have met with appearances near the bulbs of some long hairs that might fairly justify the term pseudo-bulb being applied to them, but these were manifestly young swellings (degeneration-zones), and the constrictions below them indicated that the subsequent atrophic process had commenced. (Vide adjacent woodcut.)*

It is impossible to ignore the peculiarities of the extracted hair-stumps, and their minute morbid anatomy demands full explanation.

If we seek in the next place to discover the cause of the morbid changes already described we meet with much difficulty.

In discarding, as I do, the parasitic theory of the disease, I am disposed to agree with those who regard it as a nutri-

* Represents the lower portion of a long hair removed from the margin of a patch of Porrigo decalvans. A. Primary swelling or site of commencing degeneration. B. Bulb undergoing atrophy; a constriction is apparent between A and B.

tional perversion. In the majority of cases the lesion is recovered from, therefore the change is usually temporary. In seeking for analogous morbid affections one naturally thinks of inflammations or other self-limited processes.

Dr. Bristowe advances the view that the disorder 'depends on the gradual spreading from some central point, or points, of a wave of inflammatory or other influence which, as it passes over each hair-papilla, momentarily, as it were, excites it to unhealthy over-production, and then leaves it enfeebled and perishing.' He further thinks that the redness which some writers describe, and the tingling which some patients feel, are corroborative of this view.

With reference to the latter symptoms, I have to remark that I have never met with them in any of my cases. Sir William Jenner makes a similar affirmation.* A lad who suffered from morphœa, and who lost his hair in the track of the disease over the frontal and parietal regions, described a tingling sensation as preceding the spread of the indurating process. I have invariably found the bald patches pale and free from any inflammatory appearance. As, however, such a change, if it occurs, must take place ere there is any falling-out of the hair, it is quite possible that it may escape observation.

The cases do not come before the physician till the baldness has begun. The hair does not fall out or break for some time after the morbid change has occurred in it, since, as has been shown, the affected part or parts are carried up with the advancing shaft, supported by the imperfectly nourished root below.

Dr. Bristowe's theory, expressed in his own terms, will, I believe, cover all the phænomena of the morbid process so far as they are at present cognisable,—'a wave of inflammatory or other influence.'

Amongst other influences I am certainly disposed to place those of the nervous system. Examples are not wanting of alopecia as a neurosis, nor yet of the nutritional changes in hair consequent upon nervous lesions.

c. Shaft. What may be anticipated is, that A will be carried on in the axis of the hair-follicle, and will be succeeded by an impoverished pallid shaft. Possibly a secondary swelling may be formed below A. Fracture will occur at A on some future occasion, either within the follicle or after its emergence from it, or the hair may become detached after undergoing atrophy, and be cast off entire.

* 'Loc. cit.'

The late Dr. Hillier * believed that the first step in Porrigo decalvans was atrophy of the hair, and that the presence of the fungus was due to this, and was not, perhaps, an essential part of the disease. Those who believe in the parasitic origin, assert that the fungus attacks the papilla and so causes its atrophy.

Drs. McCall Anderson † and Tilbury Fox ‡ agree that the disease may be due to perverted innervation, and thus they acknowledge two forms, parasitic and neurotic.

The former, however, declares that he has never found a fungus. I may mention in this place the following names of observers who have declared their non-belief in the parasitic origin of this form of Porrigo. Already several others have been alluded to—Cazenave, Devergie, Baerensprung, Jenner, (?) Hutchinson, Veiel, Bœck, Pinkus, Wyss, and Neumann.

Amongst those who have supported Gruby in his belief in a parasite, may be mentioned Küchenmeister, Malmsten, Robin, Wedl, Bazin, and Hebra.§

Whatever may be the exact morbid process, it is certain that at present it is beyond our powers of observation; hence we know, clinically, nothing about it. Nerve-lesion may certainly determine the change leading primarily to activity of the papillary cells. Imperfectly developed fibre-cells are produced, and frequently an undue amount of granular and pigmentary matter is formed. The cortical sheath is also less firm and compact than it should be. Next follows a diminution of papillary activity, and, finally, a temporary abeyance of hair-forming function.

It may be fairly stated, I think, that in many instances the general condition of the patient does not assist us to explain either the nature or probable cause of the disorder. As a rule, the return of hair-formation is not long delayed; it is often remarkable to observe the rapid growth of the pale lanugo in the recently stricken regions, while the morbid process is extending in other directions, on the scalp or on other parts of the body. An abundant nerve supply is furnished to the papillæ. The researches of Biesiadecki and Langerhans have recently shown this, ‖ and there is no reason to doubt that the new

* 'Handbook of Skin Diseases,' 1865.

† 'On Skin Diseases. Parasitic Affections,' 1868.

‡ 'Manual of Skin Diseases,' 1869.

§ Vid. Neumann's 'Text-book of Skin Diseases' (translated by Pullar), p. 243, 1871.

‖ Art. Hair, Stricker's 'Histology,' p. 255.

hairs are developed from the old papillæ, as is known to be the case in health.

With reference to the nervous supply of the papilla I may mention that I have record of one case where a few hairs on the vertex of a gentleman's scalp were distinctly sensitive, and when they were cut a slightly painful sensation ensued. Mason Good * mentions also, under the name of Trichosis sensitiva, another case which had been recorded as occurring in a dragoon of the Royal Guard at Paris, who had been violently kicked on the occiput by a horse. The slightest touch on the hair was felt instantly, and cutting of it gave exquisite pain. Baron Larrey tested the accuracy of this on one occasion by making his assistant clip one of the hairs without the patient perceiving it. Although this was done with dexterity, the soldier suffered considerable pain.

In illustration of neurotic alopecia I may briefly give the following records:—

A gentleman was thrown from a dog-cart some years ago, and sustained an injury to the head. Shortly afterwards, all the hair on his body fell off, and has never returned. I have read of a similar case which occurred likewise after a cerebral concussion, and all the hair fell off in about a year subsequently.†

In another instance a circular bald patch occurred suddenly on the centre of the occipital region in a gentleman aged 55. He had recently suffered much mental distress, caused by parting with his eldest son, who went to India. In a few months the hair returned. Nitrate of silver lotion was employed, and tonics were given. It is of interest to note that four years afterwards this gentleman suffered from partial ageustia. Gradually all meats became tasteless, and more and more salt had to be taken to excite the sapid powers. Sweet things, coffee, and tea were, however, tasted and enjoyed.

This state lasted for two or three years, and the necessity for large quantities of salt was less and less felt, till the taste at last fully returned. The general health was good during this time, with the exception of some catarrhal condition of the

* 'Study of Medicine,' vol. v. edit. 2, p, 689. (Case reported from a foreign journal in 'Edin. Med. Journal,' July 1823.)

† Reported by Staff-Surgeon Cooper Todd. 'Lancet,' July 1869, p. 41. Mr. Todd also alludes in his notes to the occasional loss of hair following shocks by lightning especially affecting the head. Vid. also Holmes' 'System of Surgery,' edit. 1, vol. i. p. 750. Neumann again quotes a case in which, after concussion, amaurosis of one eye occurred simultaneously with the loss of hair of the head, eyebrows and lashes (Simon). 'Op. cit,' p. 243.

fauces and pharynx, to which, no doubt, some part of the affection was due. At first, under the late Sir James Clark's direction, swabbing of the pharynx with nitrate of silver was practised, and quinine was given internally. For the greater part of the time the affection lasted no treatment was adopted. This gentleman is now 77 years of age, and is the subject of chronic Bright's disease. His gustatory powers, however, are natural, and he is nowhere bald.

It is well known that the hair undergoes change in hue, size, and texture under the influence of neuralgia. Dr. Anstie * noted greyness of hair on the same side in eleven instances out of twenty-seven cases of neuralgia of the ophthalmic division of the fifth nerve. In four of these cases there was greyness of part of the eyebrow on the affected side. The same observer has also noted fluctuation of the colour, the greyness actually increasing during, and for some time after, an acute paroxysm, the hairs subsequently returning more or less to their original colour.†

Patches of grey hair occur prematurely in some persons, perhaps most frequently in the occipital region. These are probably due to trophical neuroses. They cannot, as a rule, be traced to previous neuralgia.

The hairs near the affected nerve sometimes become coarsely hypertrophied, and at other times brittle. They also exhibit a tendency to fall out with slight cause, even in large amount. Increase of cutaneous pigment likewise occurs in the region of painful nerves.

With the return to health these neuro-trophical changes disappear, either altogether or nearly so, except in cases where there is manifest overgrowth of hair, or increased pigmentation. The latter symptom, however, is said by Dr. Russell Reynolds to be capable of removal by the employment of the continuous electrical current.‡

The pubic hair sometimes falls out in women after parturition, and is restored after a time.

Dr. Bristowe quotes a case in which an intelligent woman who suffered from Porrigo decalvans for some years, and finally lost one of her eyebrows, had always a sense of tingling in the line of extension of the disease, and she knew by that feeling

* 'Neuralgia and its Counterfeits,' p. 94.

† See an interesting case of sudden bleaching of inner half of eyebrow and eyelash in a brunette, the result of a severe spasmodic tic three or four years previously. 'Lancet,' March 6, 1869, p. 324.

‡ 'Clinical uses of Electricity,' 1871, p. 18.

that the hair was about to fall before the [illegible] baldness occurred. I have previously stated that I have not met with this symptom in any of my cases.

Although the cases just now related may fairly be termed neurotic forms of alopecia, I am not disposed to put them into the same category with cases of true or ordinary Porrigo decalvans.

The following case appeared to me to throw some light upon this subject:—

A woman, aged about 42, came with a bald patch on the left occipital region. There was also a denuded plot towards the centre of the same region. Neither of these areæ were sharply defined, the margins were indistinct, and the baldness, though very marked, was not absolute.

On careful inspection, I found one or two apparently broken hairs, and withdrew them along with certain long hairs for further microscopic examination. The history in this case was that the hair had fallen out in about a fortnight, and that there had been, and still was, severe occipital neuralgia on the left side. A paroxysm had occurred one night, and the next day the hair began to fall. There was much suffering when the patient applied to me. It further transpired that a similar attack had befallen this woman two years previously, and the hair had fallen from the same region. On the removal of the neuralgia, the hair returned as before.

This, then, was a distinct case of neurotic alopecia. My examination of the broken and of the long hairs showed that there were no appearances, either in the free extremities or in the roots or bulbs, in any way comparable with those found in cases of ordinary Porrigo decalvans. There was neither atrophy nor any granular degeneration, and there was no swelling in the axis of the hairs.

Again, the naked-eye appearances of the two affections differed. The margins were not abrupt, and there were but two broken hairs found near them; whereas, in the same stage of true Porrigo decalvans, many hair-stumps would probably have been found.

I treated the case with increasing doses of Fowler's solution, internally, and employed belladonna liniment and chloroform for the bald and painful patches. The patient ceased attendance shortly, and I did not learn the results of the medication.

I believe, then, that a distinction must be made between truly neurotic forms of baldness and the ordinary affection known as Porrigo decalvans. At the same time I by no means imply

that there may not be a neurosis in the latter form, only its manifestations are not as a rule announced by pain, perverted sensibility, or by increased or diminished blood supply.

Is Porrigo decalvans a contagious affection?

This question is naturally a somewhat important and practical one. Those who hold the parasitic theory of the origin of the disease must place it in the same category with other affections due to epiphytic intrusion, and must therefore believe it to be capable of spreading by contact.* Clinical evidence points decidedly to the contrary belief. I have witnessed no case in which any proof was shown that the disease was caught from another affected person. I have seen individuals, members of large families, presenting typical illustrations of the disorder in every stage who have never passed it on to others. It is obvious that the classes furnishing the cases reported in this article live in such conditions as would assuredly favour the spread of contagious diseases. At all events, in all classes of communities it is clear that the truly parasitic affections pass on but too readily.

The remarkable series of cases reported by the late Dr. Hillier as occurring in a large school at Hanwell has no doubt influenced the opinions of the profession upon the subject of the contagiousness of area. Dr. Bristowe is disposed to believe that these cases were probably examples of ringworm. The two diseases sometimes co-exist. Mr. Hutchinson states that area rarely shows any tendency to spread by contagion,† but he has recorded three cases occurring in one family in which he found epiphytic elements.‡ I am unable to offer an explanation of these cases, which are carefully recorded by this most able observer, and I can only express my belief that they may have been 'mixed' cases of area and tinea tonsurans.

Dr. Vallance,§ after an experience of nearly 100 cases at the Forest Gate District School amongst poor children, has recorded his opinion that the disease is not contagious.

Instances are not very uncommon in which two members of a family are simultaneously affected, one case perhaps following the other: when this happens the notion of contagion is very apt to suggest itself to the minds of the practitioner, the patients and their friends. I do not myself believe it to be justifiable. The occurrence is certainly as explicable on the

* It is to be borne in mind that the Tineæ proper are not all equally contagious.
† 'Med. Times and Gazette,' February 1858.
‡ 'Path. Soc. Trans.,' vol. vi. p. 379.
§ 'Lancet,' December 10, 1870, p. 842.

view that the morbid changes, be they what they may, but not parasitic, are common to more than one member of the same family.

Dr. Walter Fergus, the resident medical officer at Marlborough College, informs me that he has only seen two cases of area during his long connection with that institution. He disbelieves in the notion of contagion, and would not isolate a boy from his fellows on account of the disease.

Dr. Carmichael of Burntisland has sent me a record of two cases that he has observed, and which occurred in the same family. In one the young woman had suffered for six years, and she was supposed to have caught the affection from her sister with whom she had slept for many years, and who had lost all her hair. These are evidently two severe cases of the disease, and the prognosis is unfavourable as to recovery. I cannot accept the evidence of contagion afforded by the history of these patients, for the disease is manifestly a constitutional one, and no parasitic disease runs such a course as this.

Dr. Begbie has kindly written to me and expressed his views on the subject of this disease. He has grave doubts of its parasitic nature, and he does not believe it to be contagious. He thinks the lesion is one of nutrition, and in most cases owns a nervous origin.

I may lastly quote Mr. Startin as a non-believer in the contagiousness of Porrigo decalvans.

Two kinds of Area.

I think that the description as given by Celsus holds good clinically at the present day. We may define two forms of Porrigo decalvans. First, and most commonly, we meet with the disease occurring in scattered bald plots, chiefly in persons under the age of puberty. It may last from a few weeks or months to a year, but seldom longer. The prognosis is good.

Secondly, we observe that the affection arises in the scalp, spreads indiscriminately, attacks the facial, axillary, and pubic hair, and may even lead to the removal of all the hair of the body. This is more common in adults. The disease is altogether more grave, owns some more profound lesion, and is not unfrequently incurable. Relapses may occur in both forms; in the latter, a local or partial restoration of imperfect hair may only be temporary.

According to Celsus the serpentine form assumed by the bald patches occurs most commonly in children, and often terminates

spontaneously (ophiasis). I have, however, observed that severe cases of area have commenced in this manner in adults, and I think this serpentine course should lead to caution in the prognosis.

Dr. Begbie corroborates my opinion as to the above description. He finds that the disorder is more readily checked and cured in the young. 'I dread,' he remarks, 'its more serious results in young adults, females more than males.'

Dr. Vallance has found that the cases in the school before referred to get well in about a year.

Some further remarks on the duration of the disease will be made under the next head.

The Treatment of Porrigo Decalvans.

From the earliest times a stimulant form of therapeutics has been in vogue for the treatment of areæ. 'Quidam hæc genera arearum scalpello exasperant: quidam illinunt adurentia ex oleo; maximeque chartam combustam: quidam resinam terebinthinam cum thapsia inducunt. Sed nihil melius est, quam novacula quotidie radere: quia, cum paulatim summa pellicula excisa est, adaperiuntur pilorum radiculæ. Neque ante oportet desistere, quam frequentem pilum nasci apparuerit. Id autem, quod subinde raditur, illini atramento scriptorio satis est.' *

It is perhaps hardly a matter for inquiry at the present day as to the influence of 'charta combusta' upon the bald patches. Supposing paper to have been made of papyrus, as was no doubt the case in Celsus' time, we have simply a recommendation that carbon and a proportion of alkaline ash should be applied. It is, however, more interesting to find that turpentine, resin, and ink should be mentioned as remedies by Celsus. To the present day the application of ink is a popular remedy for 'ringworms' of all kinds. It must, however, be remembered that 'atramentum scriptorium' was also a carbonaceous compound in the time of Celsus, and not a solution of gallate of iron as in the present day.†

Thapsia does not enter into the modern materia medica. It is an umbelliferous plant of the 'deadly carrot' genus, a native of Northern Africa, and yields a milky juice which is acrid and cathartic.‡ Pliny mentions its use in the treatment of scalled head, and it is still employed in Barbary for the cure of ringworm.

* Celsus, loc. jam cit.

† Pliny, 'Nat. Hist.,' book xxxv., chap. 25; also note in vol. v. p. 2 and 3, Bostock's Translation.

‡ Pliny, 'Nat. Hist.' book xiii. chap. 25.

The purely stimulant system of therapeutics has been somewhat modified of late years, since the disease has come to be regarded as parasitic in its nature. Hence phyticides have been much employed, such as corrosive sublimate, sulphurous acid, iodine, acetic acid, &c. These agents have proved of service in treatment, but it may just be noted that they are all more or less stimulant applications.

If, as I believe, we have no occasion to employ parasiticides, we may restrict the local remedies to such stimulants as best commend themselves.

Following up his views on the morbid anatomy of the disorder, Rindfleisch has proposed a rational method of treatment, viz., first to increase the general growth of the hair, and, secondly, to diminish the resistance offered by the follicles; and he believes that a combination of tincture of capsicum with glycerine meets these two indications.

He gives a drawing of a hair which has been subjected for nine days to this treatment. In this specimen the granular zone is seen, but the pseudo-bulb has disappeared, and the shaft has become elongated, as he believes, at the expense of it. It is to be noted also, that no follicular particles are shown in this drawing, the explanation being, that the resistance in the sac has been overcome by the mollifying influence of the glycerine. The character of the free end of this hair is not exactly depicted, it would have been important to know whether it was fractured or not.

I venture to assert that this specimen was a dead hair, which was about to be cast off with its atrophied root and bulb. I do not believe that any treatment will arrest the change when it has once begun: affected hairs either break off early, or are shed later. Recovery results from a fresh stimulus in, and a new growth from the papilla.

My attention has been lately directed to a plan of treatment for this disorder, which has been recommended by Professor von Erlach, of Berne, who kindly sent me his pamphlet on the subject.* He believes that turpentine freely applied is the best remedy, and states that the disease can be cured by means of it in fifty days, whereas tincture of iodine does not effect the same result for three months. I have tried von

* 'Die Anwendung des Oleum Terebinthinæ bei parasitischen Hautkrankheiten.' Von Dr. Karl von Erlach. Bern. 'Berliner Klinischen Wochenschrift,' 1868. No. 44.

Von Erlach has seen seven cases of Porrigo decalvans, and he believes the disease is parasitic.

Erlach's plan in a number of cases, and, though I cannot testify so highly in favour of it as he does, I believe it to be one of the best. I have certainly had evidence of more rapid improvement in some cases under the use of turpentine. This agent commends itself for various reasons: it is powerfully stimulant, it soaks deeply into the skin, and infiltrates all the structures of the hair follicles. It has also the advantage of not staining the skin, and of being easily applicable. I recommend it to be well rubbed into the bald patches and their neighbourhood twice a day with a piece of sponge. I do not think that it is sufficiently stimulant to promote as rapid a cure as is desirable, and I therefore apply the liquor epispasticus about twice in the month. The concrete oil of mace is of use as a constant local stimulant. I believe that occasional shaving of the new downy hair is proper, and that it promotes a more rapid and a stronger growth.

As to internal remedies, there is, I believe, no routine plan, each case must be treated according to its special indications. Lean and pallid children manifestly require steel and cod liver oil, and I think the last-mentioned drug is the more important. I have not satisfied myself that arsenic possesses any peculiar value, though I have used it largely. Begbie prescribes nervine tonics in the earliest stages, and generous diet, together with cantharidine and corrosive sublimate lotions.

In such cases of area as never recover, we must suppose that the atrophy is too complete to permit of any regeneration of the hair.

Neumann* describes an alopecia circumscripta s. orbicularis (of Fuchs) in which the baldness is alleged to be permanent, and the affected parts are depressed and atrophied, with much impaired sensibility.

The patients or their friends must be warned of the tedious course that the disease may run, and indeed much patience and perseverance are called for on the part both of the practitioner and the patient.

In most cases, however, with the exceptions already mentioned in which a cautious prognosis is necessary, the patient may be encouraged to hope for a renewal, sooner or later, of the hair-forming function.

* Op. cit.

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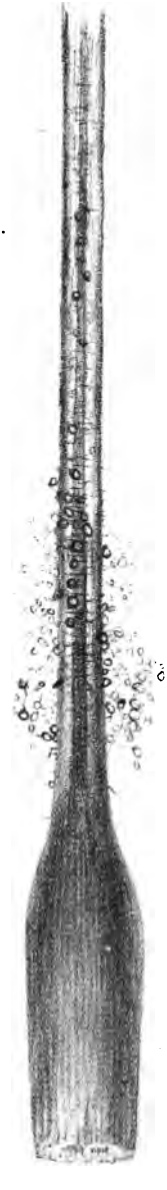

Fig. 1.

Description of Plates.*

PLATE I.

Fig. 1. Represents a hair taken from the margin of a bald patch of Porrigo decalvans. The patient was æt. 18, and the hair was fair but not grey, as it would appear to be. The dark medullary air-containing cells end somewhat abruptly, and the root is much atrophied and flattened, also twisted upon itself. There is no adherent follicular epithelium, and the hair has been as it were loose in its socket and ready for removal. Below the medullary matter, and attached to the epidermic imbricated scales, are seen some sebaceous granules, fatty and refracting. Hasty observation of these (normal) appearances might lead to the belief that mycelium and spores were growing upon the hair at this point. The fallacy is disclosed by the use of proper re-agents. This hair is merely placed in distilled water upon the slide.

Fig. 2. A hair taken from the margin of a patch of Porrigo decalvans. Adherent refracting granules are seen upon the shaft and amongst the cellular structures of the root. Liquor potassæ has been added. The root is atrophied. There is nothing in this specimen especially significant of the disease.

Fig. 3. Represents a hair pulled from the margin of a patch of scalp affected with Porrigo decalvans, and treated with a weak solution of potash. The upper part of the shaft is natural; at the middle third is seen a quantity of oleo-granular matter adhering to the cuticle; this originates from and is entangled in the epithelial cells of the hair-follicle and its sebaceous appendages. At the lower third the shaft is seen to expand equably till the line of fracture is reached. The root has been left behind in the follicle. The exuberance represents a so-called 'knot,' and the medulla ceases just above it.†

* Smith and Beck's, Oberhaeuser's and Crouch's microscopes were employed in examining these hairs. The drawings were executed from Crouch's instruments, and from special measurements of the 1-in. and $\frac{1}{5}$th-in. objectives taken for me by Mr. Symons; it appears that the former magnifies 71 diameters linear, and the latter 350, using the same eye-piece.

† In making these three drawings, several magnifying powers were employed. The various appearances depicted could not all be demonstrated at once. I vouch for the minute exactness of each.

PLATE II.

Fig. 1. Represents a bald plot of Porrigo decalvans; two other plots adjoin it. The sharp outline is depicted, and the abrupt smooth patch is seen in marked contrast to the thickly-set hair around. Scattered over the surface are various broken-off 'stumpy' or 'club-ended' hairs; these are purposely enlarged twice their natural size to render the appearances more readily recognisable. These hairs become thinner and paler towards their points of emergence from the scalp; they are easily removable by the forceps.

(Taken from a patient.)

Fig. 2. Represents various hairs magnified twice the natural size (as to their diameters) from affected areæ. It is naturally not easy to depict the exact 'naked-eye' appearances; but the points intended to be here illustrated are as follow:—The hairs are altered in their contour, which is irregular; in passing them through the fingers this is appreciable; the shaft is thicker in parts, thinner in others, and sometimes it is flattened. Again, there is a tendency for the hairs to be twisted several times upon their axis, and as the root is approached there may sometimes be found one or two of the knotty exuberances already described. Below these, or if these do not exist, the shaft is seen to dwindle and become devoid of the due amount of pigment. The root is more or less atrophied, and immediately upon extraction the root end is apt to curl acutely upon itself. Sometimes the hair breaks off and comes away with a ragged end, and the line of fracture appears to correspond with a weak point within the hair-sac, and which is not always marked by a 'knot' or exuberance.

Fig. 3. Represents a hair stump, which has been pulled out from a bald plot; at the upper end the line of fibrous fracture is well seen; no re-agent has been added. A little below the broken end an exuberance is seen, and the line of continuity is lost on the right side. A rupture has occurred in the cuticle, and the loosely packed hair fibre-cells are seen protruding. There is an excess of dark oily and granular matter in the swelling and its vicinity. The root is seen to be tufted, resembling an ordinary shed hair, but without any particles of adherent root-sheath. The fracture at the upper extremity does not appear to have occurred across one of the swellings; but it may nevertheless have taken place just below such a one, for it is common to meet with two of these expansions on one hair. The addition of dilute liquor potassæ would cause the emergence of the fatty and granular matter from each open portion of the hair, that from the root, however, being due to the proper sebacous elements of the part.

(Magnified 350 diameters linear.)

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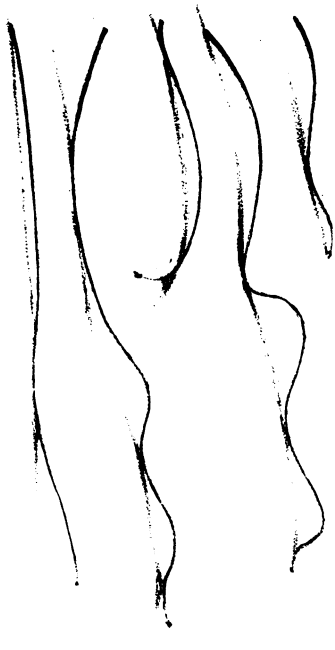

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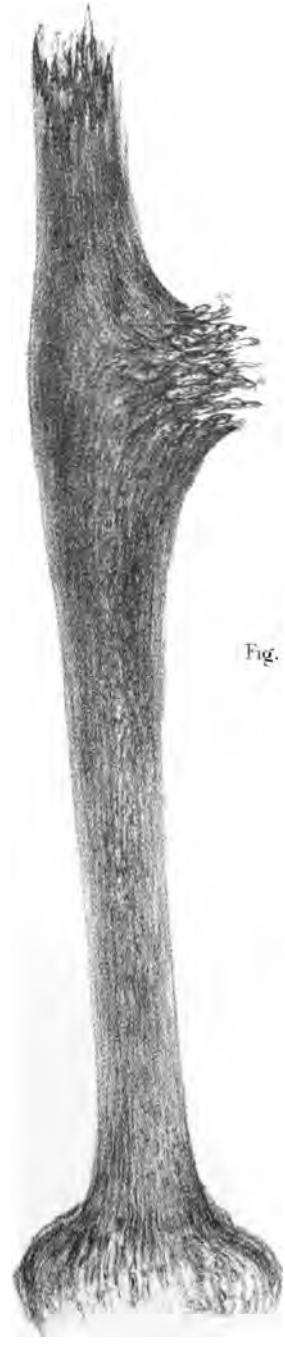

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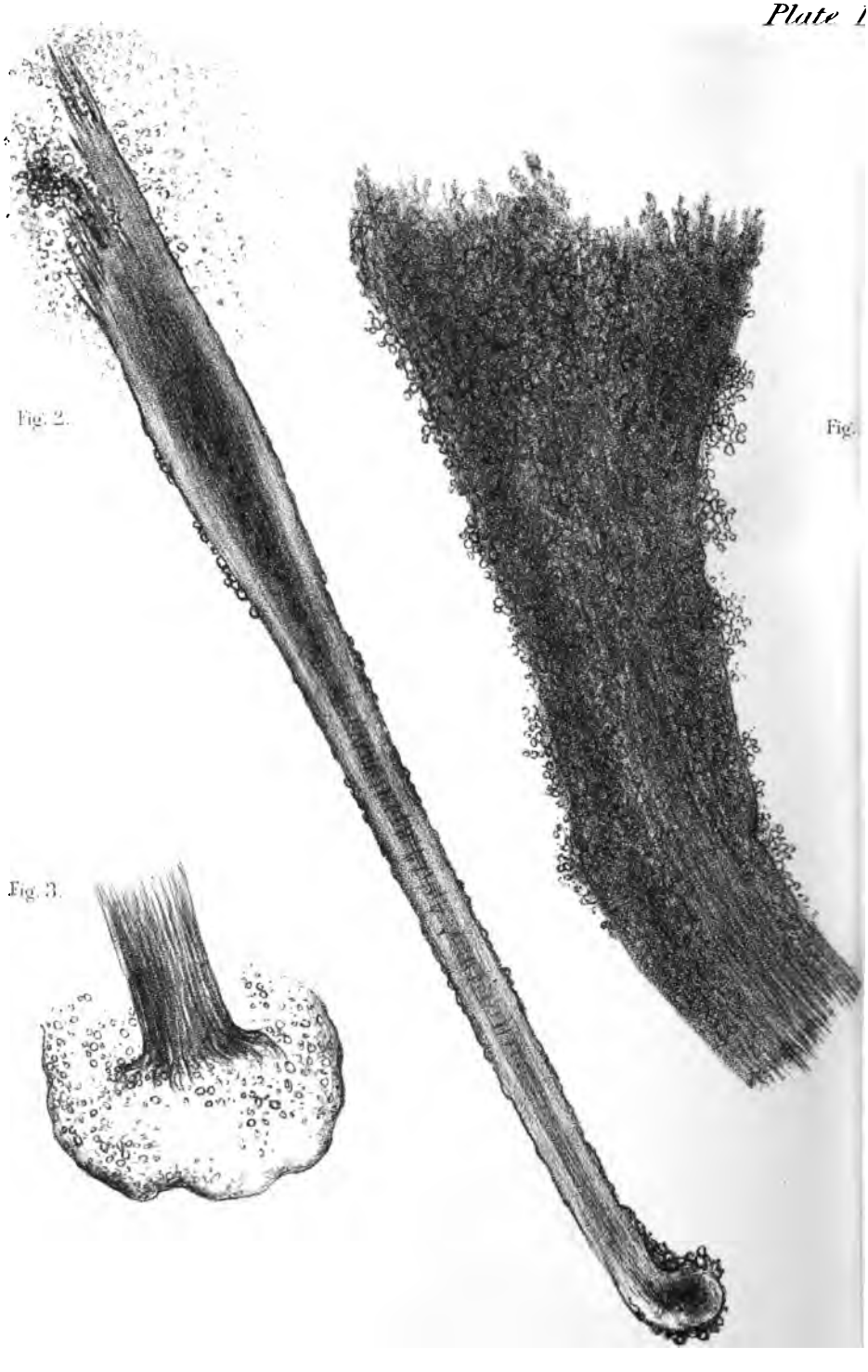

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PLATE III.

Fig. 1. Represents a hair that has been broken off from its root within a hair-sac in a case of Porrigo decalvans, treated with liquor potassæ, and magnified 350 diameters linear. The appearances at first sight are much those of a hair taken from a patch of Tinea trichophytina, or true ringworm. Abundant oleo-granular matter is seen to exude from the broken root end, and the same appears to invest the shaft of the hair. There is much pigment with it. These appearances are not of much significance, since they occur in coarse healthy hairs which, in dark persons, contain a large amount of pigmentary and granulo-oily matter. Washing with ether causes this to dissolve; but it rapidly reappears and issues afresh from the hair when again treated with potash. It is to be noticed, however, in this specimen, that the shaft is bent in its course towards the root, and that it commences to expand gradually; such appearances in a hair taken from the vicinity of a bald plot, together with the presence of so much granular matter, may fairly be considered indicative of the morbid process peculiar to the disease.

Fig. 2. Represents a hair stump from a patch of Porrigo decalvans, treated with liquor potassæ. The fractured end is seen, and myriads of refracting granules are emerging from amongst the fibre-cells. (Molecular action is seen when these become free on the field.) Below, an expansion of the shaft occurs, and the central portion of it appears very dark; this appearance is due sometimes to excess of the degenerative products—granular and oily matter—and sometimes to air-spaces between the loosely packed bundles of hair fibre-cells. In other instances the medulla of the shaft seems to be affected, and an increase of granular matter is found amongst it. Some refracting granules are seen adhering to the shaft. No trace of any fungous or parasitic elements. The lower portion of the shaft is pale, and tapers gradually towards the root, which is much atrophied. Refracting granular and oily matter is attached to the root, which has still some of the follicular elements adherent. On adding glycerine and water to this specimen, and while teasing with needles, fragments of dark granular matter could be detached from the broken end of the shaft.

Fig. 3. Represents an atrophied and tufted root with much granular matter amongst the follicular cells. Liquor potassæ has been added. No parasitic elements visible.

PLATE IV.

Fig. 1. A hair stump which has been removed by the forceps and placed in glycerine and water for some days. No expansion is visible; but the shaft is seen to taper gradually towards the root, which is much atrophied, and has only a small fragment of follicular lining adherent to it. Refracting granules are seen in clusters along the margins of the shaft. There is marked deficiency of pigmentary matter.

Fig. 2. A hair stump from an affected part of scalp, treated with pure sulphuric acid. The splitting-up of the hair fibre-cells is due to this re-agent. A 'knot' or expansion is seen, and much dark matter appears in its interior. At the line of fracture (inferiorly in the drawing) more dark matter is seen amongst the frayed-out fibres; this represents another 'knot.' The granular matter is not demonstrable when sulphuric acid is used, and in course of time the re-agent permeates the entire hair, and forces out bubbles of air from the dark spaces, which forthwith disappear. The bundles of fibre-cells are thus shown to be less densely packed in these exuberances, and in their interstices granular matter and air are lodged.

Figs. 3 and 4. These drawings represent parts of the same hair stump. Fig. 3: at *a* the hair has been cut across with a razor from Fig. 4 at *b*. A second section, but partial, has been made somewhat below *a*. Fig. 3. Sulphuric acid was the re-agent employed, hence the splitting-up of the individual fibres. The complete section was made across the centre of a swelling, and in Fig. 4 the granular *débris* was seen to exude from the cut extremities of the fibres. Much dark matter is seen in the swollen portion, and in Fig. 4 the shaft is seen to dwindle suddenly and pass on towards the tapering and atrophied root. In the latter specimen glycerine was employed, and the hair was also steeped for some time in carminate of ammonia and subsequently washed. In this and in the other specimens similarly treated, only a few of the cells attached to or forming part of the bulb attracted the carmine, and this is depicted in the figure.

Fig. 4. Fig. 3. Fig. 2. Fig. 1.

T.Gwilt del.

Article XX. — *A Case of Optic Neuritis in which Wecker's operation was performed: and some selected Cases.* By Henry Power.

THE subjoined case is the first I have seen in which I have considered it justifiable to adopt the operative procedure for optic neuritis recommended by Dr. Wecker at the late Ophthalmologic Congress held in London. The result is, to a certain extent, encouraging, since the vision of the eye operated on, which was previously entirely abolished, has so far improved as to enable the girl to see light, and even to distinguish the hand passed in front of the eye, whilst it has materially diminished the pain and headache from which she previously suffered. I should undoubtedly have operated on the opposite eye in the same way had not the general health of the girl appeared to fail; and as it was possible that both the local and general symptoms were due to the gradual progress of tubercular meningitis, I did not like to perform an operation, the results of which are unknown upon an eye the vision of which was still pretty good. For the notes of the case I am indebted to Mr. Harris.

Optic Neuritis.—Both eyes affected.—Wecker's operation.—Relief of symptoms.

E. B., æt. 13, a tolerably healthy-looking, rosy-faced girl, was admitted on July 11, with loss of sight in the right eye, and dimness of vision in the left. There was the following history. Two years ago pain first came on at the back of her head; shortly afterwards the eyes became dim, and this dimness advanced until the sight of the right was entirely gone. At that time she was under the care of Dr. Andrew in Mary Ward.

Six months ago the sight of the left eye became impaired too, and that now is progressing and causes her great anxiety. She suffers from constant and severe pain at the back of her head.

Result of ophthalmoscopic examination:—

Right eye.—Disc red, with the margin exceedingly ill defined, in other words, woolly. The veins large and tortuous, some becoming lost for a short distance near the margin of the disc. The arteries very numerous and dark; here and there are small white patches apparently situated in the retina.

Fovea centralis very deeply tinted. Vision absolutely nil. T.n.

Left eye.—Ophthalmoscopic examination shows a similar condition to exist, though scarcely so far advanced. Vessels scarcely so congested, or numerous, and the disc is not quite so congested. $R\ v=o\ L\ v=\frac{9}{200}$. She read No. 5 print at six inches. Tension normal.

The treatment adopted was that of injecting subcutaneously strychnia gr. $\frac{1}{30}$ into the temples and applying blisters there, under which treatment the vision somewhat improved in the left eye. August 5, $v=\frac{12}{70}$ and $\frac{\frac{1}{3}}{2\frac{1}{2}}$.

The field of vision of the left eye was taken and found to be excessively small.

Thus the patient continued up to September 3, when I decided to perform Wecker's operation of slitting up the sheath of the optic nerve on the right side. Having made an opening in the conjunctiva a little behind and below the insertion of the tendon of the external rectus, the eye was turned inwards as far as possible, and the guarded knife (Wecker's) passed behind the eyeball; there was but little trouble in finding the nerve, as directly that was touched it caused the eyeball to rotate; the sheath was then slit up for the distance of a line. The conjunctiva was then united with three silk sutures. These were allowed to remain for three days and then removed, at the end of which time the wound was quite healed; there was perception of light in the right eye on the third day after the operation, and great diminution of the pain in the head. The ophthalmoscopic appearances were the same except that the retinal vessels were less congested than previously to the operation. The girl has remained in this state up to October 9, but without further improvement in the vision. She is able to see the hand or even one finger passed between her and the light, but cannot count the fingers. During the last fortnight she has had scarcely any return of the headache, but she has fallen away considerably in colour and flesh. The appearances presented by the discs are not materially altered. I was unable to see any mark of the wound internally.

Cases of Injury to the Eye.—The following case of persistent pain after a slight blow on the eye presents several points of interest:—A young man, æt. 29, was, in September 1869, overlooking a workman who was striking the tire of a wheel with a hammer, when a fragment struck him a sharp blow on the right eye. He rubbed the eye for a moment or two, but saw perfectly well with it after a few seconds. In the course of a drive home

of some miles, he observed that the vision in this eye became confused and misty. He experienced considerable pain on arriving at home and entering a room where there was a lighted lamp, and though he slept tolerably well, there was so much pain and irritation on the following morning that he requested a surgeon to see him. He was told that there were two minute fragments sticking in the cornea, but that they were so small they would probably suppurate out in the course of a day or two. Finding that they did not do so, he applied to an oculist, who at once detached them with a needle. When I saw him four months had elapsed from the date of the injury, and yet he was wearing a pad and bandage, first, because it relieved the pain which was constant, though not very severe, in the affected eye; and, secondly, because as soon as the injured eye was opened, the sound eye began to weep and to be distressed by light. He was a well-grown, healthy-looking young man, married, of very regular and abstemious habits, accustomed to much driving, with good appetite, and his general health perfectly good. The irritability of the injured eye, and sympathetically of the opposite one, was, when I saw him, beginning seriously to interfere with his work. For several weeks previously he had worn dark glasses and used belladonna lotion; whilst at times he had kept his room for several days together, in the hope that the pain might subside with rest. He had latterly been taking cinchona and arsenic, but without noticeable improvement. On examination, both eyes appeared perfectly healthy, the conjunctivæ being pale, the irides acting well and equably, both by direct light and reflectorially. The most careful examination of the surface of the eye and under surface of the lid with a lens failed to detect the presence of any minute spiculum of metal imbedded either in the cornea or conjunctiva. The tension of both eyes was equal and normal. Ophthalmoscopic examination showed that the media were quite clear; the disc of the right or damaged eye was, it was thought, rather more pink than the other, but the difference was not very great. There was a well-marked physiological excavation in both. The edges of the disc in the right eye were very softly defined. The light was very trying to the eye, and it was impossible to make a long examination.

Careful consideration of this case led to the conclusion that the patient was suffering from one of two things: either the injury had produced some nervous derangement leading to cramp of the ciliary muscle (a view that was supported by the fact that the pain was comparatively slight when the eye was

at perfect rest, but became severe and was accompanied by redness and lacrymation on the slightest attempt to read), or it was possible that a minute fragment of iron or wood might have imbedded itself in the ciliary region and have become invisible. Had this been the case, it might have been expected that pressure carefully applied round the margin of the cornea would have revealed some spot more tender than the rest. No such spot, however, was discoverable. Under either supposition, however, it was obvious that rest was most essential—if it were purely nervous, to allow the parts affected to forget as it were the irritation, and, if there were a spiculum, to give it the chance of becoming encapsuled. He was directed to continue the use of dark grey glasses, to avoid reading and all exercise of the eyes on minute objects, to apply a blister to the right temple twice a week, and to take a mixture containing strychnia and iron. Three weeks after he called upon me to say that he had experienced considerable improvement from the treatment adopted, but that, on the previous day, he had attempted to read a little, but was obliged to give it up on account of the pain in the eye and aching of the brow it brought on. A curious point about the case was that, although previously he had not observed any difference between the eyes, a No. 36 convex glass materially helped the vision of the right. He was now ordered the bromide and iodide of potassium, with sulphate of zinc in pills, the former in 3-grain doses, the latter in 1-grain. The patient did not complain of sparks or flashes, but the tension of the eye was certainly increased; and he was told that if this symptom increased in any considerable degree, he would probably have to submit to iridectomy.

A month later he was in about the same state. A musca was visible in the vitreous, both to the patient and under ophthalmoscopic examination, and he was ordered quinine in 2-grain doses, with 10 minims of perchloride of iron, and small doses of pil. hydrargyri and opium. After this I saw no more of the patient till June 28, 1871, when he called upon me and stated that he had for some months been almost entirely free from pain, but that, on the previous night, he had had a severe attack which had lasted two hours, again following somewhat unusual exertion of the eye in reading. As he has not appeared since, I am in hopes that he has not had any return of the pain.

The precise pathology of such a case as this is certainly obscure; but the second of the above hypotheses appears to me to be the most probable.

Another case, however, has recently been under my care in which, though the symptoms were similar, no such explanation could be given. The patient was a boy about 11 years of age, at a public school, who, whilst playing at football six weeks previously to my seeing him, on January 3, received a violent blow exactly in the middle of the forehead from the head of another boy. He was stunned for some minutes, and a considerable swelling rose at the point struck. Since the blow, there had been constant intolerance of light, and incapability of exerting the muscles of accommodation, any attempt to read producing immediate congestion of the conjunctivæ, a flow of tears, and pain. The swelling was still distinctly perceptible, and was very tender to the touch. It was only possible to make a very brief ophthalmoscopic examination with a feeble light; but the lenses were ascertained to be clear and not dislocated, and no mark of injury was perceptible. He was ordered to wear a shade or dark glasses, to rub belladonna extract over the brow, and to avoid reading. The boy stated that he saw everything much more clearly and distinctly with No. 36 glasses. There was no increase in the tension of the eyes. On February 25 there was still great intolerance of light, and in fact all the symptoms remained unchanged. He was ordered a blister on each temple. On April 24, the swelling had considerably diminished, and was more prominent on the left than on the right side of the median line; but there was still much intolerance of light, with redness and lacrymation on attempting to read moderate-sized print for more than a few minutes. He was ordered to rub a little blue ointment into the swelling, to repeat the blister, and to take some iodide and bromide of potassium. The last account I heard of him from Dr. Collyer of Enfield, by whom the boy was brought to me, was to the effect that he was going on well.

In this case the reflex irritability of the retina, ciliary muscle, and lachrymal gland seems to have been occasioned by lesion of the terminations of the supra-orbital nerves, and some remains of the affection will probably linger on till absorption of the extravasated blood is complete.

During the present year I have had three cases of injury to the eye from the sudden escape of the cork of a soda or seltzer water bottle; one in which the injury was slight and transient, a second in which it was more severe, and a third in which permanent damage was done.

The first case was that of a young lady whose head was somewhat turned away from the bottle when the cork flew out,

and who consequently only received the blow obliquely. The concussion deprived her of sight for a few seconds. I saw her about a week after the accident and she acknowledged that she felt little or no inconvenience and came rather with the view of being satisfied that no internal mischief was brewing. The media were clear, she could read all types without difficulty, and there was really nothing the matter with her.

The second case was that of a physician who received the blow full upon the globe. The pain was very severe and vision for a time entirely abolished. I found him a few minutes after the accident had occurred very much prostrated and alarmed. He soon recovered himself on being assured that the globe was not, as he almost feared, ruptured, and that the loss of vision would probably only be temporary. The conjunctiva was slightly ecchymosed, the cornea had a superficial abrasion, the pupil was a little larger than the other and very sluggish in its action. Whilst I was speaking to him vision gradually returned to some extent, so that he was able to distinguish the light of a bright fire, and after a few minutes the bars of the grate. Under these circumstances it was considered best that he should be kept for a day or two in a darkened room, have a purge and live moderately. Steady improvement took place, and day by day for a week or ten days he could see more and more, till at length its deficiencies were scarcely noticeable when both eyes were opened together. The only symptoms remaining now, some six months after the accident, are that the whole field of vision is somewhat darker or duller than that of the sound eye; secondly, that all objects appear rather smaller than with the sound eye; and lastly, that vertical lines have a little cam or bend near their centre. The blow has rendered this eye somewhat hypermetropic, if it were not so before.

The last case is still more interesting. The patient, æt. 26, was a barmaid, and came to me on the 19th of January for impairment of sight of the left eye from a blow with the cork of a soda-water bottle at 8 P.M. five days previously. She was stunned with the blow and nearly fainted with the pain. On opening the eye she found she was unable to distinguish the lights of the bar. The pain continued to be severe for three days and then rapidly diminished. On examining the eye there was little indication of serious mischief. She was, however, unable to see more than the hand moving between her and the light. The iris was moderately dilated and motionless. On ophthalmoscopic examination the media were

found to be so turbid that the fundus could not be seen; large flakes and spots floated about, and I was under the impression that there was detachment of the retina, though this was afterwards found to be incorrect. There was no question but that hæmorrhage had taken place into the vitreous. The treatment recommended was very simple, and consisted in abstaining from night-work and gas-light, wearing dark glasses by day, and taking a mild aperient. On the 5th of February she was unable to see No. 20 of Jäger at six inches distance when she looked directly at it, but by shifting the paper in various directions she could distinguish isolated letters of No. 10. This was best accomplished when the paper was placed to the inner side, the outer portion of the retina therefore being least damaged. On directing her to fix the eyes upon a wafer on a black board at the distance of a foot, no part of a circle four inches diameter could be perceived; beyond this all objects could be dimly seen. The media were much clearer to-day, and it could be distinctly seen that the blow had caused hæmorrhage on or beneath the retina. In the inverted image the ecchymoses were situated below and rather to the outer side of the optic disc. They appeared in the form of eight or nine oblong spots of various size, all having the same direction and of a uniform deep red tint. The outline of each was tolerably well defined, and did not appear to be surrounded by any œdema. Careful examination of the fovea centralis failed to detect any indication of a blood-clot, and the media were not sufficiently clear to permit any slighter change such as œdema to be perceived. The optic disc and retinal vessels presented similar characters in all respects to those of the opposite side. There was no increase in the tension of the eye. The lower border of the lens presented a slight opacity, with numerous fine radiating striæ. On the 5th of April the condition of the vision had so far improved that the circle of lost perception had become reduced to two inches in diameter. The extravasations had almost vanished, their colour being very much fainter and the outline of each of the spots very obscure. On the 15th May it was noticed that the pupil was flattened above, and three small hæmorrhages not previously observed were seen by the side of the large internally situated ascending vein. The vision but little improved from the condition in which she was when first seen. On the 28th May the small spots were fainter, the disc was surrounded by a fine white line of sclerotic not present in the opposite eye. Four months after this date scarcely any improvement in vision had taken place, but no marks of the primary lesion were discoverable.

In connection with these cases of injury, I may mention a remarkable instance that has fallen under my notice, of a foreign body remaining long under the eyelid, without occasioning much inconvenience. The patient applied complaining of a pricking sensation under the left eyelid, due to the entrance, he said, of an ear of barley which had entered the eye whilst he was reaping, no less than twelve weeks previously. There was no conjunctivitis, and I should not have noticed anything peculiar about the eye. On inverting the lid, I did not at first observe any foreign body, but upon more minute inspection I discovered a yellowish line in the sinus which, on being seized with the forceps, was easily removed, and proved to be a fragment of an awn of barley about one inch and a quarter in length, and partly imbedded in thick mucus. The only annoyance the man had felt was a pricking sensation on making certain rolling movements of the eye and on pressing the lid against the globe.

Acute choroiditis in the left eye; with hypopyon.—Increased tension.—Iridectomy.—Excision.

J. G., 64, a carpenter, was admitted on March 7, with the history that three months ago, whilst reading by the fireside, he suddenly felt great pain in the left eye, which had been present more or less ever since. The sight of the left eye—previously good—was greatly impaired, and he had quantitative perception of light only. There was lachrymation and photophobia. He suffered from loss of sleep, and appetite, and as a consequence loss of flesh. A week before admission the right eye was a little dim. *R.* $v=\frac{15}{40}$.

The left pupil was fixed and dilated. The cornea had the scar of an old ulcer. Conjunctiva was congested. Hypopyon was present in small quantity. $T=2$.

The day after admission, iridectomy upwards was performed. The pain diminished but returned at night, and was again relieved by a full dose of hydrate of chloral.

He went on well up to the 11th, when an onyx formed in the left cornea, which, as it was increasing, was opened. Wine was added to his full diet, and ammonia and bark ordered thrice daily.

Under this treatment he did well up to the 21st, when it was found that the swelling of the eyelids was increasing steadily owing to the roughness in the cornea from laying open the onyx. The chemosis of the conjunctiva bulbi also increased, and leeches were applied to reduce it but failed to do so.

Tension + 1. at this time. v = perception of light only. Prolapse of the iris occurred shortly after this, and altogether, as the eye appeared to be hopelessly spoilt, and the pain great, I decided to extirpate the eyeball, which was done on April 16. On opening the globe after removal, a large clot was found occupying the place of the vitreous. He rapidly got well after this, and on May 4 a glass eye was put in, and on the 10th he was discharged. *R.* $v = 1$.

Article XXI.—*Note on the Death-Rates after Amputations in Hospital Practice.* By George W. Callender, F.R.S.

THREE years have elapsed since I published* some statistics of amputations. Amongst other facts, I then gave the results of the amputations performed by Sir James Paget, or by myself, during the years 1861–69. The following are the cases which have been under the care of one or other of us since the date (May 1869) of the last case referred to in the first series:—

	Sex	Age	Amp.	Result	Injury or Disease
1	Male	41	Leg	Recovered	Chronic ulcer of the leg
2	Do.	28	Do.	Do.	Disease of the tarsus
3	Do.	56	Arm	Do.	Compound fracture into elbow joint
4	Do.	9	Thigh	Do.	Disease of the knee joint
5	Do.	19	Leg	Do.	Disease of the tarsus
6	Do.	12	Thigh	Do.	Osteoid cancer of the tibia
7	Do.	39	Forearm	Do.	Chronic inflammation of hand
8	Do.	34	Leg	Do.	Disease of the ankle joint
9	Do.	19	Thigh	Do.	Disease of the knee joint
10	Do.	37	Leg	Do.	Disease of the tarsus
11	Do.	19	Thigh	Do.	Cancer of the tibia
12	Do.	8	Do.	Do.	Leg torn off at knee joint
13	Do.	6	Leg	Do.	Disease of the ankle joint
14	Do.	59	Forearm	Do.	Disease of the carpus
15	Do.	6	Leg	Do.	Disease of the ankle joint
16	Do.	42	Do.	Do.	Disease of the tarsus
17	Female	40	Thigh	Do.	Disease of the knee joint
18	Male	15	Leg	Do.	Disease of the tarsus
19	Do.	45	Do.	Do.	Secondary for crushed leg and foot
20	Do.	8	Thigh	Do.	Disease of the knee joint
21	Do.	38	Forearm	Do.	Lacerated hand and forearm
22	Do.	32	Leg	Do.	Disease of the ankle joint
23	Female	27	Thigh	Do.	Disease of the knee joint
24	Male	14	Do.	Do.	Ditto ditto
25	Female	17	Do.	Do.	Ditto ditto

* 'St. Bartholomew's Hospital Reports,' vol. v. 1869, p. 249.

Summary.

Results of the Amputations at the Thigh, Leg, Arm, and Fore-arm, from May 1869 *to June* 1872.

	Primary or for Injury								Secondary or for Disease							
	Thigh		Leg		Arm		Forearm		Thigh		Leg		Arm		Forearm	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
	1	..	..	..	1	..	1	..	9	..	11	..	..	..	2	..
Mortality per Cent.	..		..		..		..		..		..		..		..	
or 0 in	3								0 in	22						

Giving a total of twenty-five consecutive amputations, twenty-one of which were at the thigh or leg, without a death.

If amputation statistics are to be relied upon, no stronger evidence could be given of the healthy condition of the Hospital wards during the three years to which the above figures relate.

Article XXII.—*Cases in Morbid Anatomy.* By J. Wickham Legg, M.D., Lond.

I WISH to express my best thanks to Dr. Black and Dr. Southey for their kind permission to publish the notes of the following cases, formerly under their care in the Hospital:—

Hydatids of the Spleen and Liver.

Reuben F., about 52 years of age, was under treatment in Matthew Ward from February 20 to April 13, 1872, for constant vomiting, joined to epileptiform attacks and delirium.

The man died on April 13, and the examination was made fifty-two hours after death.

There was great wasting; the skin of the face very sallow, and that of the body darker than natural.

The meninges of the brain were very watery and the brain shrunken. No other morbid appearance was discovered.

The heart was small, and the aortic and mitral valves were thickened.

Pleura covering upper lobe of left lung was universally adherent; and in this lobe of the lung there were three or four cheesy and calcified masses, varying from nuts to peas in size. The lower lobes of the lungs were collapsed and œdematous.

In the right lobe of the liver there were two large swellings, each bigger than an orange. On opening these swellings, a purulent fluid, and membranes resembling hydatids, escaped. In the left lobe there was another hydatid cyst, about the size of a walnut, containing a clear fluid and numerous echinococcus heads. The microscope showed excellently the laminated structure of the cyst wall, as well as the echinococcus heads. The spleen was closely adherent to the diaphragm; it was small, and at the upper part contained a putty-like mass, within which was crumpled up, in a manner which greatly recalled the plicative æstivation of some flowers, a transparent membrane, which showed a laminated structure under the microscope.

The stomach was slightly, if at all, dilated. At the pylorus could be felt a swelling; and, on opening the stomach, this was seen to be caused by an ulcer, which formed an almost complete ring round the pyloric end. The edges of the ulcer were greatly raised and everted; the floor was very thin, and had contracted adhesions to surrounding parts, such as the pancreas. The microscope showed no trace of an alveolar structure or of fibres; there were numerous granular roundish cells about the size of a white blood corpuscle. The intestines and pancreas were natural.

Both kidneys were highly contracted and cystic. The aorta, singularly, was free from atheroma.

The supra-renal bodies were natural.

In nearly all the cases of echinococcus of the spleen with which I am acquainted, the parasites have been present in the liver or diaphragm as well; rarely, however, the spleen alone may be affected. The presence of this parasite in the spleen is sufficiently rare to deserve recording, as Förster could, in 1863, collect only seven instances.*

* Förster, 'Handb. d. path. Anat.' Leipzig, 1863, 2te Aufl. Bd. ii. 832.

Escape of Hydatid Cyst into Bile duct.

William B., 23 years of age, died on November 2, 1871, in Luke Ward.

For about five weeks before his death he had suffered from jaundice, constant diarrhœa, and vomiting.

Examined twenty-three hours after death.

Body uniformly and deeply jaundiced. Heart and lungs natural. There were some old adhesions about the gall bladder and under surface of liver. On dissecting out the gall ducts, both the common and the hepatic were seen to be distended to the size of a finger, and something apparently solid could be felt within them. On opening the common duct near to the duodenum, only some turbid colourless fluid escaped, followed quickly by a membrane closely resembling that of an hydatid cyst. Following the duct into the liver, it was found to contain similar hydatid membranes, and, in the right lobe, close to the diaphragm, where the liver is thickest, the duct opened into a large abscess; from the opening a part of the cyst was still protruding. As the cyst passed by the mouth of the duct from the left lobe, it sent up a prolongation into this for about half an inch. The left duct was clearly plugged, for, immediately above, the ducts were all greatly dilated and the liver tissue of a chrome red. Around the abscess containing the hydatid were many smaller abscesses, varying from a marble to a millet-seed in size. The portal vein contained no clot.

Stomach, intestines, spleen, and kidneys natural.

The escape of hydatids into the bile ducts is not a very uncommon event. There are now many cases published, in some of which a cure has been brought about by the escape of the hydatid into the intestine. In one of Dr. Church's cases this natural cure was being accomplished, when the patient unfortunately died of an epistaxis. After death the hydatid was found projecting some distance into the duodenum.*

Disease of the Pulmonary Valves.

Amelia B., 24 years old, died on April 28, 1871, in Hope Ward, after an illness lasting about five months, and said to have begun with a pleurisy.

Examination thirty-four hours after death.

* W. S. Church, 'On the Treatment of Hydatid Tumours of the Liver: a Dissertation for the Degree of Doctor of Medicine in the University of Oxford.' London, 1868. Page 8.

Body well nourished; numerous purpuric spots over belly and legs.

Each pleura contained about 6 oz. of bloody serum. Pericardium about 4 oz. of turbid serum.

Inferior and superior vena cava full of blood. The heart was considerably, though not very greatly, hypertrophied, and on taking it out of the body the right side was seen to form the greater part of the heart, the left side being a mere appendage to the right. Conus arteriosus markedly enlarged. The right auricle dilated; tricuspid orifice admitted all the fingers up to the middle phalanx. Tricuspid valves natural. The pulmonary valves were recognised by their situation and threefold division, but their usual shape and appearance were quite lost; they were changed into thick folds, with a highly granular surface; they were quite incompetent to close the pulmonary orifice. From the centre of one of these folds arose a bridle, which at first descended somewhat into the conus arteriosus, and thence passed upwards, to be attached to the wall of the pulmonary artery, about an inch above the deformed valves. A little above this attachment there was another spot on the pulmonary artery, covered with fibrin, about the size of a filbert. Left auricle a little dilated; mitral orifice and valves natural. Left ventricle a good deal hypertrophied. The aortic valves diseased similar to pulmonary.

Pulmonary artery followed in both lungs. Many of the fourth and fifth divisions were plugged in both lungs, but no great corresponding change in the area of lung supplied by the vessel was produced; the tissue seemed somewhat denser than natural.

The liver not enlarged; the centre of lobules of a dark red brown; circumference of a pale yellow.

Spleen considerably enlarged: at upper end a large pale infarct, section of which was of a dirty whity-brown, while at its borders the substance was apparently sloughing. Around the infarct, spleen adherent to peritonæum.

Stomach and intestines natural.

Kidneys slightly enlarged; capsule tears off with slight difficulty; surface smooth; cortex broad, pale, opaque; medulla deep red-brown. On surface, numerous scars, slightly pigmented, looking like obsolescent infarcts.

Syphilitic Gumma of the Heart.

A man, between 25 and 30 years old, died suddenly on February 26, 1872, while in a public-house. His body was examined within twenty-four hours after death.

The following notes are taken, by Dr. Gee's permission, from the Register-book of the Hospital:—

'Slight general anasarca.

'Peritonæum: considerable excess of serum; large simple serous effusion into pericardium, also into left pleura. Righ pleura universally adherent.

'A large hydrocele of tunica vaginalis on right side.

'A bruise (recent) on right temple.

'Body well nourished.

'Heart somewhat enlarged.'

A considerable swelling of walls of left ventricle at its base, and close to the septum behind. When cut into, it is seen to be due to a firm white substance, replacing the muscular tissue, irregularly scattered—*i.e.* not forming one tumour, blending at margins with muscular tissue; yellow white colour.

'Aortic sigmoids, thickened and somewhat adherent, not competent.

'Mitral cusps adherent by edges; orifice much narrowed, funnel-shaped; chordæ tendineæ thick.

'No great hypertrophy or dilatation of any part of heart.

'Lungs natural, except collapsed.

'Liver congested, fatty, friable; no scarring or tumour.

'Spleen large, hard.

'Kidneys indurated.

'Stomach, intestines, natural.

'No scar discoverable on penis.

'Pharynx natural.'

The tumour of the heart was first hardened in chromic acid, and, after hardening, it was kept for a few days in weak spirit. Sections were then made from every part of the new growth, immersed in glycerine, and examined with a high power of the microscope.

Near to the edges of the new growth, sections showed a transparent or slightly fibrillar matrix, in which nuclei, usually round, and varying in size from a white to a red blood corpuscle, were seen. Nearer to the middle, the nuclei became far more abundant, filling the greater part of the field, while the matrix in many places was distinctly fibrous. Around the nuclei, there could in some places be discerned with difficulty cells, mostly round, and of a diameter just double that of the nucleus; in other cases, oval or spindle-shaped. In the middle of the growth, the sections showed a confused, highly granular mass, and in this mass fibres could occasionally be made out.

In the tumour, the remains of striated muscular tissue were rarely met with.

From the microscopical appearances, the tumour might belong to the group of the sarcomata, or to the granulation tumours. The rapid change of the nucleated tissue into an amorphous granular mass is very favourable to the supposition that the growth is a gummy tumour of the heart. A general tuberculosis was not present in this case, so that all idea of tubercle may with safety be excluded. Sarcomata of the heart are never primary, and no other tumour could be discovered in the body.* The evidence is, therefore, altogether in favour of the new growth being a gummy tumour of the heart, a morbid appearance which, though rare, has been now several times described.

Fibrous Degeneration of the Muscular Fibres of the Heart.

A man, aged about 30 years, was brought dead to the Hospital on the morning of September 21, 1872. He had been attending one of the London Hospitals for some complaint about the 'chest,' and was wearing a plaister over the sternum. On the morning of his death he was sweeping a yard, when he was seen to stagger and fall. He was brought to the Hospital, and then found to be dead.

Examination fifty hours after death. Weather, for time of year, very cold.

Body very muscular; no appearance of disease externally or scar on the penis. Slight amount of subcutaneous fat.

No disease could be discovered in the brain or its arteries.

Tongue somewhat coated; pharynx natural; trachea rather hyperæmic, and containing some frothy mucus. Pleuræ contained each about a couple of ounces of bloody serum. Lungs highly œdematous; the apex of the left is pigmented, shows cicatricial tissue; and near this, bladders of local emphysema, none larger than peas.

Pericardium natural; no excess of fluid; heart not enlarged; mitral and tricuspid orifices somewhat dilated; water poured into aorta does not run through into the ventricle. On dividing with a scissors the hinder wall of the left ventricle, close to the septum, a tough substance is met with in the muscular tissue near the apex. This substance creaks under the knife, is of a white colour, supplied with numerous vessels running parallel with the fibres; it is plainly of a fibrous

* Virchow, 'Geschwülste,' Bd. ii. 442.

constitution, the fibres being arranged concentrically with the heart, and running almost horizontally. The substance encroaches on the wall of the ventricle for about a square inch, and occupies nearly the whole of the thickness of the ventricular wall. It forms one tumour; that is, it is not broken up into islets by intervening sound heart-tissue; it is fringed out at its borders, where it touches the natural heart-substance. Portions of the fibrous growth, being teazed out with needles, and examined under the microscope, show ill-formed fibres, with no determinate course, but mixed up with each other in a confused mass. The fibres are not very delicate, and contain in their meshes many oil globules and granules. There is no appearance whatever of cells. Occasionally running through the field may be seen a broad fibre, showing well-marked transverse striation, evidently an unaltered muscular fibre of the heart.

There is no hypertrophy of the heart; the left ventricle is not thicker than natural; the muscular fibre is of a good colour, but the whole heart is flabby. The heart's cavities were filled with blood that was nearly fluid. The blood throughout the body showed scarcely any clotting.

The arch of the aorta is greatly thickened by very marked atheromatous change, and is slightly dilated. The thoracic and abdominal aorta shows but slight alteration.

The liver flabby, and of a green colour around the blood-vessels: the blood in the blood-vessels contains air. There is no scarring in the capsule or liver itself.

Under the peritonæum, about the spleen and left kidney, is a considerable extravasation of blood, which already contains abundance of air-bubbles. The spleen itself is large, very dark, and soft.

The stomach shows the appearance of a chronic catarrh, and contains about an ounce of a fluid in colour like *café au lait.* The intestines are natural.

The kidneys show well-marked chronic hyperæmia. They are of natural size; the capsule tears off somewhat less readily than it should. The section shows an almost uniform brown-red colour of pyramids and cortex; kidney substance tough.

ARTICLE XXIII.—*Case of Popliteal Aneurysm, for which the femoral artery was tied with carbolised catgut. Subsequent death from hæmorrhage.* By LUTHER HOLDEN.

I THINK it right to publish the following case, for the daily particulars of which I am indebted to my dresser, Mr. Ilott:—

James Watt, aged 30, of middle height, with fair complexion, ill nourished, by occupation a cooper's labourer, was admitted into Pitcairn Ward, under the care of Mr. Holden, on May 22, 1871, suffering from popliteal aneurysm in the left leg.

History.—Has never had any serious illness. His occupation is laborious; and of late he has not lived well. Has been moderately temperate. About three months ago, whilst returning home from his work in the evening, he felt, suddenly, a severe lancinating pain in the left ham, so severe that he with difficulty reached his home, resting on the way. The next day the pain left him, but returned in the course of three or four days. He remained in this condition, the pain alternately attacking and leaving him, until about a fortnight before his admission into the hospital, when he noticed a swelling in the popliteal space, about the size of a walnut, which has steadily increased in size.

Condition on Admission.—There is a sacculated aneurysm of the left popliteal artery, about the size of a hen's egg. There is well-marked pulsation and thrill. On applying a stethoscope, a loud, rasping bruit is heard. Pressure on the femoral above diminishes the size of the tumour. Great pain is felt around the knee, occasionally extending up and down the limb.

The lungs and heart are normal. The urine doe s not contain albumen or sugar.

May 24.—The patient did not sleep well last night, and complains of cold sweats. In the afternoon, Mr. Holden ordered the leg to be swung at right angles to the thigh, so as to relax the parts, to the great relief of the patient. The limb was carefully padded with cotton-wool.

May 25.—To-day the femoral artery was ligatured by Mr. Holden, in Scarpa's triangle. Some little difficulty was occasioned during the operation, by the bleeding of a branch of the saphenous vein which ran across the femoral sheath. Mr. Holden employed carbolised catgut instead of the ordinary silk ligature. The wound was closed with sutures of silver

wire, and dressed with lint soaked in carbolised oil (1·40). The limb was then wrapped in cotton-wool from the toes to the groin and lightly bandaged.

7.45 P.M.—The patient has not slept since the operation. He recovered quickly from the effects of the chloroform, and was not sick. Has taken some beef-tea and twenty minims of liq. opii. sed. The limb feels cold and numb. He is free from pain around the knee, but suffers from severe pain and smarting in the wound. There is no pulsation in the aneurysm.

May 26.—Last night had forty-five minims of liq. opii. sed., and slept for three hours after its administration. The temperature of the limb is higher, and sensation is returning. There is slight pulsation perceptible over the aneurysm.

May 27.—Had a good night's rest without the aid of opium. There is less pain in the limb. Complains of headache. Tongue slightly furred. There is considerable pulsation in the sac of the aneurysm.

May 28.—Did not sleep well. Was very restless. Ordered liq. opii. sed. ♏. xxx.

May 29.—Had a good night's rest. Says that he feels sore all over, especially over the outer side of the thigh, where there is an erythematous blush. There is still marked pulsation in the aneurysm.

Ordered, Chloral hydrat. gr. xxx.
Syrupi, ℥fs.
Aquæ ad. ℥j.

May 30.—Had the draught last night, but did not sleep well. Complains of headache. The chest feels sore and painful. Respirations short and catching. Pulsation of aneurysm somewhat diminished in force.

May 31.—Had a fair night's rest. There is a discharge of fœtid thin green pus from the wound. The margins are red and puffy. The aneurysmal thrill is distinct, but the pulsation is more diffuse than before. There is not so much numbness in the limb.

June 1.—A large quantity of pus escaped from the wound this morning on the patient pressing the part with his fingers. A poultice was then applied. Severe pain was felt around the knee about six o'clock last night. In the evening the face was flushed, and he complained of headache. At half-past eight he took some beef-tea for supper, seemed cheerful, and conversed with the patients around him.

June 2.—At half-past two this morning the nurse on

duty noticed that his head felt cold and clammy, but his feet were still warm. On looking into his bed it was found that he was literally lying in a pool of blood. The house-surgeon was immediately summoned. He found the man almost pulseless, but conscious. Stimulants were freely given, but in spite of all efforts to avert the fatal result, death ensued at a quarter past four in the morning.

Post-mortem Examination.

June 4.—The examination of the body was made by Mr. Bloxam. On opening the wound and dissecting out the parts, the following appearances were found:—The saphenous vein was natural. A large collection of pus was found on the under surface of the sartorius muscle, burrowing up and down between that muscle and its sheath. At the point where the vessel was tied, there was a small jagged perforation of the arterial coats, through which the hæmorrhage had taken place. Not a trace of the ligature could be found after a most careful search. On slitting up the canal of the artery, the inner and middle coats were seen to be fairly divided. There was no trace of any clot, the vessel being pervious throughout. The aneurysmal sac was very thin, intimately adherent to the surrounding tissues, and filled with a loose spongy coagulum. The aneurysm had burst on its anterior surface. There was a large quantity of blood effused around the sac, which had made its way between the two heads of the gastrocnemius. The blood was partly liquid and partly coagulated.

Article XXIV.—*Proceedings of the Abernethian Society for the Winter Session* 1871–72.

THE Abernethian Society, composed of the Teachers and Students of the Hospital, holds its meetings in the Reading Room on every Thursday evening during the Winter Session, for the reading and discussion of papers on subjects of Medical Science or Practice, and for the exhibition of Pathological Specimens.

October 12, 1871. Dr. Hollis, President, in the Chair.

Mr. Savory commenced his introductory address by alluding to the origin of the Abernethian Society. He stated that its

foundation preceded that of the Medico-Chirurgical and most other Societies in London; that it was essentially a students' society, and derived the greater part of its support from them. He also referred to papers read by former members of the Society, and the interesting and instructive discussions arising from them. To present members, and to those desirous of becoming members, he urged the desirability of their acting, first, the part of listeners; and, before attempting to read a paper upon any subject, of making themselves thoroughly acquainted with its literature.

Mr. Ferguson stated that the exhibition of Pathological specimens had always been an important feature in the Society.

October 19. Mr. VERNON, President, in the Chair.

Mr. Doran read a case of imperforate rectum, in which the usual operation was not performed. This course was justified, he thought, by the distance of the blind extremity of the gut from the surface.

Mr. Doran also read a case of intra-capsular fracture of the neck of the humerus, and a case of talipes calcaneus.

At the close of the meeting, two microscopic specimens were exhibited by the President, the one of optic neuritis, the other of glaucoma.

October 20. Mr. VERNON, President, in the Chair.

Mr. Bridgeman read some cases which had come under his notice at the Leicester Infirmary, illustrative of the difficulties which in severe injuries, and especially in cases of compound fracture, surround the question of operative or of non-operative procedure.

Mr. Stoney exhibited an ulcerated portion of intestine from a patient who died of typhoid fever.

Mr. Strugnell exhibited some specimens of echinococci.

November 2. Dr. HOLLIS, President, in the Chair.

Mr. Callender read a paper on the 'Arrest of Arterial Hæmorrhage by Torsion.' He began by saying that, since there was nothing of greater practical importance to the surgeon than the determination of the best method of arresting hæmorrhage from large arteries after amputation or wounds, it

would be worth while to compare certain methods which are commonly practised, viz. acupressure, ligature, and torsion.

After briefly stating the history of acupressure and its revival by Sir James Simpson, he proceeded to describe the changes which took place in connection with the vessel as the result of the operation, and gave as his opinion that, in consequence of there being no division or retraction of the internal and middle coats, the clot formed was not of itself sufficient security against recurrent or secondary hæmorrhage; added to which, the experience of acupressure at St. Bartholomew's was unfavourable.

Turning next to ligature, he described the division of the internal and middle coats, and the formation of a clot, which ensured safety from hæmorrhage at least until the ligature came away by ulceration of the outer coat.

He next proceeded to consider torsion. Torsion first originated in 1829, by Amussat's observation of the method in which torn and bruised vessels closed naturally. It was subsequently revived by Mr. Syme, of Edinburgh.

Three methods for the practice of torsion were described.

1. The end of the artery is seized with a pair of forceps, and twisted until the extremity is twisted off.

2. The end of the artery is drawn out, and the vessel grasped transversely by a pair of forceps a quarter of an inch from the cut end; the latter is seized by a second pair of forceps, and the portion of vessel between the two is twisted. This is described as 'limited torsion.'

3. The end of the artery is seized with a pair of forceps and slowly twisted until resistance ceases. This is described as 'free torsion.'

When torsion is employed the internal and middle coats are torn across, as by the ligature, and incurved, the external coat escaping laceration: in addition to the internal clot on the cardiac side of the rent, a clot is also formed beyond the internal, middle, and external coats, by which they are effectually supported.

Placing acupressure on one side, where he was of opinion that it should remain, Mr. Callender then proceeded to discuss the relative value of the ligature and of torsion. The irritation kept up in the wound by the ligatures, the pain and difficulty sometimes experienced in their removal, the occasional occurrence of secondary hæmorrhage and delayed union of the wound, were instanced as the principal troubles met with in their use. In torsion, the only risk was the possibility of re-

current hæmorrhage, for, as no ulceration took place through the external coat, secondary hæmorrhage, that is bleeding which occurs after the first twenty-four hours have elapsed, was impossible.

Mr. Callender instanced several cases of amputation which had healed by first intention, and with no untoward symptoms, all the arteries having been twisted.

November 9. Mr. VERNON, President, in the Chair.

Mr. Cripps read a case of aneurysm of the ascending aorta. A man was seized suddenly, ten days before his admission to the Hospital, with difficulty of breathing, accompanied by pain over the sternum; his face, arms, and the upper part of his chest soon began to swell, and at the same time he began to experience difficulty in swallowing. On his admission all these symptoms increased in severity, and continued to do so up to the time of his death, which took place after he had been three weeks in the Hospital.

The autopsy showed an aneurysm of the first part of the arch of the aorta, which had ruptured into the vena cava superior.

Mr. Ilott read a case of Hodgkin's disease, in which epileptic seizures had occurred in connection with anæmia, consequent on severe flooding after confinement. The treatment had included quinine, steel, and cod-liver oil.

Mr. Ferguson showed a perforating ulcer of the small intestine, the cause of fatal peritonitis in a case of typhoid fever; and also an ovary, with a corpus luteum, from the same case.

November 16. Dr. HOLLIS, President, in the Chair.

Mr. Benson read a case of hemiplegia, mentioning the causes, the situations of the lesions in such cases, and the diagnosis of the different forms.

Dr. Broadbent's theories were then expounded in explanation of the non-paralysis of muscles which act bilaterally. He maintained that the particular lesion in the case before the Society (one of cross-paralysis) was almost certainly situated in the pons Varolii, pressing on the motor fibres of the crura-cerebri and the facial nerve of the left side.

Mr. Ilott narrated a parallel case, in which aphasia had been the most noteworthy symptom.

November 23. Mr. VERNON, President, in the Chair.

Mr. Bloxam read some cases, commencing with one of scirrhus of the breast; at the same time exhibiting the specimen which had been removed by operation. He then proceeded to discuss the nature of cancer, as to whether it was a constitutional or a local disease, and the consequent propriety of removing a part or the whole of organs attacked by it. The direction of the incision for removal of the breast was then considered. He inclined to a transverse one, extending sufficiently far into the axilla to enable a thorough examination of the glands in the neighbourhood to be made.

Mr. Bloxam next exhibited a specimen of fatty tumour, removed by operation during life. The point of interest in this case was the peculiar sense of fluctuation present during life, which deceived many of those who examined it.

Mr. Bloxam then exhibited a liver ruptured by external violence, there being no injury to the abdominal walls, or even to the subjacent peritonæum.

December 7. Dr. HOLLIS, President, in the Chair.

Mr. Odell commenced a paper on 'Mercurial Tremor,' by briefly sketching the origin and recognition of the disease under the title of 'Mercurial Erethism.'

He then proceeded to enumerate the symptoms as described by Pearson, which were markedly those of debility, and then those observed by Tardieu, which were those of a blood-poisoning.

Salivation and mercurial stomatitis generally precede the tremor, with general dulness of the intellectual powers. The upper extremities become weaker, and are the first to exhibit the trembling movements; then the inferior extremities lose their power, and the patient becomes unable to walk. Changes then ensue in the composition of the blood, especially in the red globules and hæmatine, and phthisis perhaps supervenes.

He then discussed the predisposing causes of this affection, which were, briefly, intemperance, debility, and constitutional predisposition.

He held the disease to be an affection of the nerve-centres, in which situation the poison seemed to have its most powerful effect. With regard to treatment, after the removal of the exciting cause, iodide of potassium stands nearly alone, bromide of potassium and succus conii being used by some. In

conclusion, he detailed two cases which had come under his notice, and which illustrated various parts of his paper.

December 14. Dr. HOLLIS, President, in the Chair.

Mr. Vernon read a paper on 'Affections of the Eye after Railway Accidents.' He began by urging the necessity of a thorough acquaintance with the anatomy and physiology of the eye in health, in order to understand and explain the anomalies which may be present in disease.

He drew especial attention to the action of the circular and radiating fibres of the iris, as in courts of law the changes in the pupil were likely to be better appreciated than other and more important changes in the fundus of the eye. The importance of the sympathetic nerve, acting as a link between the eye and the spinal cord, was also to be considered in railway injuries, where concussion or shaking of the spinal cord frequently took place.

The affections of the sight with which we have to deal are two, viz. the loss of the power of accommodation—in fact, presbyopia, and a state of congestion of the optic nerves, a condition of things which, sooner or later, gives place to paleness and atrophy, and more or less complete amaurosis.

He next proceeded to describe two cases which had come under his observation. In both the usual symptoms of shock were present, viz. confusion of ideas, pain in the head, loss of sleep, dreams, torpor of the bowels, &c. In one case, the accident was so very slight as to lead to the suspicion that the man was an impostor, and had read up his symptoms from some medical work, in order to obtain pecuniary remuneration.

January 11, 1872. Dr. HOLLIS, President, in the Chair.

Dr. Walsham read cases of ulcer of the stomach very successfully treated on the Karlsbad method, viz. by administering in the early morning on an empty stomach sulphate and carbonate of soda largely diluted.

The 'rationale' of the treatment was expounded, and other modes of combating the disease enumerated.

The discussion chiefly related to the mode of causation of gastric ulcers.

Mr. Stoney narrated cases of acute disease treated with great success by quinine.

January 18. Mr. FURNER, Honorary Secretary, in the Chair.

Dr. Hollis read a paper on the 'Specificity of Disease.' He said that organic change probably underlaid all alteration of function, and that in our inquiries we were to seek facts rather than hypotheses. He mentioned the experiments of Chauveau, Sanderson, Bastian, and others, who had been unable, in specific inflammations so called, to find any elements differing in any degree from those met with in simple inflammations; and so, with Chauveau, he would conclude that the differences were of quality and properties, not of form and constitution. Examining critically the vaccine vesicle, and comparing it with those skin diseases which resemble it in its varying stages, he concluded that it possessed no character which could be called peculiarly its own, and the different diseases of the skin merged insensibly into one another. Thus an erythema, extending more deeply than its wont, became an erysipelas. He afterwards mentioned that pyæmia, complicated as it often was with various eruptions, would in different cases resemble typhus, or typhoid, or glanders, or small-pox, or acute rheumatism, and, indeed, could only be certainly diagnosed by the metastatic deposits. Since similar causes, then, produce such unlike effects, is it safe to assume that definite series of phænomena in all cases arise from the same or similar causes? He thought not, and concluded that the doctrine of specificity required careful revision. As illustrating the same subject, he drew attention to the varying effect of drugs on different persons in varied quantities, and when administered after diverse manners; and, in conclusion, threw out the suggestion that the cause of the differences in diseases and in the action of drugs might perhaps in some degree be found in the operation of those subtle physical forces of heat, light, and electricity, about which there was still so much to learn.

January 25. Dr. HOLLIS, President, in the Chair.

Dr. Duckworth read a paper on the 'Nature and Treatment of Eczema.' He commented on the frequency of the disease, that it affected all ages, that it was the exclusive property of no one diathesis, although strumous, gouty, and rheumatic people, and the dyspeptic, were most liable to it. Its type was a vesicle; but the condition of eczema might be reached from an erythema, a papule, a vesicle, a pustule, a fissure, or

a combination of these. Eczema would thus be a very comprehensive term, including impetigo and lichen. Such is the view taken by Hebra, Erasmus Wilson, and McCall Anderson, in whose writings eczema stands as the type of inflammation of the skin. The morbid anatomy was then discussed, chiefly from the observations of Neumann and Biesiadecki. He then spoke of the characters of the disease, that it was attended by itching and smarting, weeping of the surface, or, at any rate, œdema, vesicles, papules, or pustules, and, later on, crusts, scabs, infiltrations, or redness or moisture of the surface. The simplest notion of eczema is afforded by the consideration of a surface denuded of its epidermis.

Passing on to the treatment of the disease, the acute variety was first noticed. Local treatment was chiefly commended. Starch and zinc oxide, with camphor or carbolic acid to allay itching, or the diachylon ointment of Hebra (emplastrum plumbi and olive-oil).

Thin gruel and decoctum amyli were recommended as washes, and constitutionally the patients, and not the disease, were to be treated.

For lichenoid eczema, a combination of zinc oxide, glycerine, hydrocyanic acid, and aqua calcis was advised, with steel and arsenic internally.

In the sub-acute, and more so in the chronic eczemas, strong stimulants, as liquor potassæ, pitch, and sapo mollis were considered to be indicated, or one of the ointments of mercury, or even liquor epispasticus.

Many local eczemas, with their appropriate treatments, were then mentioned; and this long and elaborate paper concluded by enjoining tender treatment of the very old and very young, and with the remark that occasionally, although very rarely, it might not benefit a patient to cure too quickly or at all a skin disease, as its place might be taken by some more dangerous malady.

February 1. Mr. VERNON, President, in the Chair.

Mr. Young brought forward a case of malignant disease of the stomach in a man aged 53, who had died a few days after his admission into the Greenwich Hospital. There were several interesting points about the case: first—the fact of no tumour being palpable during life; secondly, the short duration of the symptoms, only three weeks; lastly, the post-mortem appearance, viz. a large fungus-like, medullary tumour, occupying

the posterior wall of the stomach, the fact of the pleuræ being covered with black spots and the supra-renal capsules being extensively degenerated and filled with cheesy material.

Mr. Doran then read a paper on 'Circumcision.' He first remarked that the occasional dangerous consequences of circumcision scarcely allowed it to be classed among the minor operations.

Among adults, circumcision was practised in congenital cases of phimosis, and in the phimosis produced by venereal disease. A long and narrow prepuce in children will often produce such an impediment to micturition, and consecutive derangement of the general health, as imperatively to demand operation.

The question then presents itself—when shall it be done? Some say not until nearly two years of age. But, bearing in mind the practice of the Jews, he counselled the operation at a very early age. He next described the ordinary mode of procedure, adding that in children the mucous membrane needs only to be slit or torn and placed in contact with the skin, whereas in adults it had better be completely and neatly pared away. In phimosis the result of venereal disease, he almost scouted the idea of cure apart from operation, and dissuaded strongly from the common practice of simply slitting the foreskin, as one almost certain to be followed by a most unseemly result. He concluded by counselling the sparing use of sutures.

February 8. Mr. FURNER, Honorary Secretary, in the Chair.

Mr. Butlin read a paper on the 'Administration of Chloroform to Children.'

He commented, first, on the safety and ease with which it was administered. He then reviewed the ideas of Dr. Snow on the subject, based on experiments on animals—that death was in all cases due to an overdose; that it began at the lungs and ended in paralysis of the heart. Then the views of Dr. Kidd, that death was due to emotional causes; but, regarding the tendency of children to strong emotions and severe frights on the one hand, and their immunity from danger after the inhalation of chloroform on the other, he could not acquiesce in the views of Dr. Kidd. Then he alluded to the views of Dr. Sansom, that chloroform was dangerous by reason of its narcotic properties alone, that it acted potently on the heart, and that the greater irritability of this organ in children was the reason of their greater immunity from danger. Mr.

Butlin's own opinion was, that deaths from chloroform might be divided into two classes—those occurring in the earlier, and those occurring in the later stages; the former arising from the heart, the latter from the lungs; the former being accidental, the latter from maladministration; the former being commoner in human subjects, the latter the only form in animals. He would account for the immunity of children by the fact of their hearts being free from fatty degeneration of muscular fibre.

He mentioned the controversy between Clover and Lister: the first advising the most attention to be given to the pulse, the latter to the breathing. Like Snow, Mr. Butlin would advise both to be carefully noticed.

In cases of danger, the head must be allowed to hang, so as to stimulate the brain; artificial respiration must be practised, and galvanism also employed, and heat must be applied to the head. In administering the vapour, lint folded only once must be used, to avoid the overcharging of the atmosphere. He mentioned that, although an irregular pulse is mostly a dangerous symptom, this will accompany a loaded stomach, and sometimes occurs as a precursor of vomiting.

He made special mention of the mode of administration during tracheotomy, during the operation for cleft palate, and during convulsions; and said that there were hardly any counter-indications to the use of chloroform, although in washing out empyemata great care was necessary; also in deep abscesses of the neck and abscesses of the tonsils.

Valvular disease of the heart was not a counter-indication, if only proper care were taken.

February 15. Dr. HOLLIS, President, in the Chair.

Mr. Horner read a paper entitled 'Notes from a French Ambulance.'

He stated that, during the late Franco-Prussian war, he had left England under the auspices of the Red Cross Society, and was attached to an ambulance in the capacity of dresser, the staff consisting of 1 chief-surgeon, 4 surgeons in ordinary, 12 assistant-surgeons, 24 dressers, and 120 hospital orderlies, with 2 dispensers.

The question of removing the wounded at once, or nearly so, from the vicinity of the field of conflict was first discussed. Mr. Horner's opinion being, that cases of injuries to the extremities should be so removed, after the injured parts had been encased in proper apparatus, plaster or gutta-percha.

Tents or sheds he preferred to regular hospitals; and the importance of nourishment on the battle-field was strongly insisted upon. Primary amputations had done better than secondary ones, those of the hip excepted, in which case both were equally fatal. The commonest diseases had been typhoid fever, dysentery, and small-pox. The greatest general mortality had arisen from pyæmia, and this had oftenest followed splintering of bones and opening of the medullary cavity.

The chief peculiarities of bullet wounds were next enumerated, stress being laid on the partial fractures thus occasioned, the grooving of bones, holes made in them as though punched, and the driving of small pieces into the rest of the bone. Bullets were extracted when this was practicable, but when not so, less disturbance than might have been expected followed their retention. Sabre wounds generally did well, lance wounds badly. It was particularly important to learn from the patient his position during the receipt of the injury—thus the course of bullets might with much certainty be learnt. He had never seen union by first intention, except after the most superficial bullet wounds; nor had he seen simple bony fractures as the result of bullet wounds.

Operations performed during the persistence of shock were better done without chloroform. A lengthened account was given of diphtheria of wounds, of which he had seen several instances.

Excision of the knee-joint had been attended with the most unfavourable results; resections of the elbow were more favourable, and these the Prussians performed by simple extraction of fragments.

Injuries to the thigh in the middle third from bullets present a most grievous problem to the surgeon; but the writer approved most of the advice of Surgeon Manley, that amputation should not be performed, but fragments merely extracted.

The French amputations were chiefly circular. Instead of our common sutures, they used pins and twisted threads; they used waxed thread for ligatures and torsion forceps in the tying of arteries.

Spirit of wine and camphor were their favourite disinfectants.

February 21. Mr. VERNON, President, in the Chair.

Dr. Lauder Brunton read a paper on 'Diabetes.' He recognised two forms of true diabetes.

1. The form in which there was increased production of sugar.
2. Where there was deficient combustion of the sugar naturally produced in the system.

The history of the great discovery of Bernard, of the existence of glycogen in the liver, was given at length, and also the mode by which the glycogen might be derived from albumen, the albumen first being converted into a peptone, and this splitting up into sugar and urea.

The counter theory of Pavy was also stated, that the sugar was derived from the intestines, the glycogen not existing in the liver during life, though a substance, to which he gave the name of amyloid, did there exist, ready to be acted on after death by a ferment, and converted into glycogen, the nervous system during life restraining the action of the ferment.

The decision lying between these two theories, the experiments of Salkowski, were mentioned.

Salkowski had found that in animals poisoned by phosphorus or arsenic the livers contained no glycogen. Now, if the theory of Bernard were correct, that the sugar is formed in the liver, glycogen being a preparatory stage, it would be simply impossible experimentally to produce diabetes in these animals; but on the theory of Pavy it would be as easy as in other cases.

These animals, however, cannot be made diabetic. Pavy's theory, therefore, is refuted; Bernard's triumphant.

Luck's experiments, moreover, tend in the same direction, since he constantly finds more sugar in the right than in the left side of the heart.

Dr. Brunton then showed that most probably diabetes was produced through the medium of the nervous system. By this theory, chiefly based on the experiments of Cyon, it is held that the vessels of the liver, chiefly the ramifications of the hepatic artery, are under the direction of vaso-motor nerves, whose centre lies in the medulla oblongata. While this centre is in action the vessels remain contracted, but little blood passes through the liver, and but little sugar is formed; but if the action of this centre be inhibited, a hyperæmia, with large production of sugar, will ensue. Diabetes will accordingly follow disease or injury of this centre, or inhibitory influences conducted to it by afferent nerves, particularly the vagus. In illustration of the last, diabetes has been produced by tænia and cured by its expulsion.

Dr. Brunton next quoted a number of experiments, showing

that the sugar of the blood was mostly converted into lactic acid, and as such burned off.

The second variety of diabetes, the result of deficient oxidation, was not discussed.

Regarding treatment, Dr. Brunton advocated exercise and the use of lactic acid, the last affording an easily combustible food to the system, and thus raising the low temperature so common in diabetics, their sugar appearing to be with difficulty combustible.

February 28. Mr. DORAN, Vice-President, in the Chair.

Short notes were read of the interesting cases in Mr. Callender's wards. The following by Mr. Ferguson:—

1. That of a man, a smith, æt. 58, who, having fallen into his own forge-fire in an epileptic fit, sustained a most severe burn of the back, followed by sloughing of about a square foot of skin and some muscle, and necrosis of part of the scapula; the chief interest of the case being the supervention of tetanic symptoms on the twelfth day, soon followed by a fatal termination.

2. The case of a girl, presumably hysterical, from whose arms and legs over a hundred needles and pins had been removed.

3. A case of comminuted fracture of femur, extra capsular, which terminated fatally on the second day. The fractured bone was exhibited to the Society.

4. A successful case of tracheotomy, for scald of the glottis, in a child seventeen months old.

The following by Mr. Jepson:—

1. A fatal case of pyæmia, following the removal of a small tumour from the shoulder.

2. A case of successful ovariotomy.

3. A case in which the leg of a boy, aged 9, having become entangled in the spokes of a carriage-wheel while he was running behind the carriage, was completely torn off at the knee-joint. The stump was trimmed in the surgery, and the boy made a satisfactory recovery.

The following by Mr. Whitmore:—

1. A case of strangulated femoral hernia in a boy, æt. 16, successfully operated upon.

2. A case of much delayed union of a fracture of the femur in its lower third, in an apparently healthy-looking woman of 37; uniting at last, after a ten months' stay in the Hospital.

March 7. Dr. HOLLIS, President, in the Chair.

On this evening short notes of cases from Mr. Holden's wards were read.

The following by Mr. Stowers:—

1. A case of extreme dislocation, backwards, of the knee, the result of repeated inflammatory attacks, in which amputation was performed by Mr. Willett. A plaster cast of the deformity was exhibited.

2. A case of ununited fracture of the middle third of the right femur, in which Mr. Willett exposed and sawed off the ends of the fragments, using afterwards a modified long splint. The case terminated fatally.

3. The case of a woman, 83 years of age, who was admitted with a strangulated femoral hernia of the left side. The strangulation was relieved by Mr. Holden, by operation, without opening the sac. The patient, however, died nineteen days after the operation, though the wound had quite healed and she had expressed herself, six days previously, as quite well.

Post-mortem examination showed the cause of death to have been peritonitis and inflammation of the large intestine.

4. The case of a man suffering from very severe erysipelas of the face and scalp, following a wound, in whom, at *one* time, the temperature reached the high degree of 106° 2′.

A point of much interest occurred during the case, viz., that while delirious he struck his hand, cutting open the second joint of the ring-finger; but though this injury was received during the height of the attack, it was not followed by erysipelas in its neighbourhood.

Mr. Furner then read the following cases:—

1. Carbuncle of the upper lip. On the second day after the patient's admission the slough was broken up by subcutaneous section, and removed as far as possible by squeezing. He was much relieved by the operation, and so continued for two days.

On the next day he began to be affected with pain on the right side of his chest, and his temperature was 107°; his breathing, moreover, was rapid and shallow. Quinine was given in doses of grs. v. every three hours, and his temperature fell to 105°; but, nevertheless, he shortly afterwards gradually sank, with many of the symptoms of pneumonia, although with imperfect physical signs. The post-mortem examination showed an intensely congested state of the lungs, with spots here and there of more intense congestion, and where, moreover, the lung tissue was breaking down; in fine, the evidences of the early stage of pyæmia.

2. A case in which a bullet had passed between the femur and the femoral artery, inflicting a trivial injury only.

The bullet was shown to the Society.

Mr. Furner also exhibited a portion of a tobacco-pipe stem, which had penetrated the soft palate and become buried in the posterior wall of the pharynx so deeply and tightly as to give some trouble in extraction. The injury occurred as the result of a fall whilst the patient was smoking.

Mr. Ferguson exhibited the head of a femur removed by operation, by Mr. Callender, from an adult patient who had suffered from hip-joint disease for two years and three months.

March 14. Mr. VERNON, President, in the Chair.

Mr. Smee read a paper on 'Fibrin, its Production and Coagulation.'

He adverted to the similarity in chemical constitution between fibrin and albumen, quoting analyses of repute. Referring to discrepancies occurring in these analyses, he impugned the accuracy of the results obtained by the usual methods, and stated that similarity in physical conditions might often prove of more value in proving similarity of constitution than exact numerical agreement in analysis.

Having mentioned and reviewed the different ideas which have been advanced in seeking for an explanation of the coagulation of the blood, attention was drawn to his own interesting experiments, in which fibrin had resulted from the passing of a weak galvanic current through a solution of albumen.

The remainder of the paper is fairly summed up in the conclusions:—

1. For the conversion of albumen into fibrin, oxygen is necessary, and the maintenance of a temperature the same as that of the blood.

2. The presence of neutral or alkaline salts retards and lessens the formation of fibrin.

3. The coagulation of fibrin is a purely physical act, and cannot in any way be considered to be identified with a vital property, as the contraction of muscular fibre.

4. That the coagulation depends on the same laws which cause all other soluble colloid substances to pectinize.

5. That the solid and fluid forms of fibrin ought to be regarded as two allotropic conditions, its presence in the blood, in the fluid condition, depending upon the physical conditions under which it is formed.

ST. BARTHOLOMEW'S HOSPITAL & COLLEGE.

PRESENT MEMBERS.

SCHOLARS.

61	Baker, W. Morrant	Humphry, Frederick A.	1853
56	Barford, James G.	Ilott, H. J.	1872
64	Bateman, F.	Jeaffreson, Horace	1859
55	Best, Henry D.	Milner, E.	1872
70	Bridgeman, H. E.	Newman, William	1854
60	Brook, Charles	Paine, William	1860
51	Brown, John A.	Rhind, Samuel	1850
69	Burn. G. W.	Rouch, J. R.	1867
66	Butcher, W. D.	Sadler, Michael J.	1855
52	Callender, George W.	Senior, Charles	1858
64	Cole, T.	Sharpin, Henry W.	1849
71	Crétin, E.	Shepard, W. L.	1865
57	Crowfoot, William M.	Skrimshire, C. P.	1869
70	Doran, A. H. G.	Smith, H. Alder	1868
68	Field, A. F.	Square, W.	1866
70	Firth, C.	Strafford, T.	1870
70	Furner, W.	Thompson, Charles R.	1850
65	Garrett, W. J.	Turner, William	1853
56	Goodall, Ralph	Verco, J. C.	1872
69	Haynes, H. E.	Vernon, Bowater J.	1862
58	Helm, George F.	Walsham, W. J.	1869
62	Hingston, Albert	Winkfield, William B.	1857

Abercrombie, J., MD Cantab. 1848, FRCPL 1849
Ackland, W. H., MRCS 1847, MD St. And. 1862
Ackland, W., LSA 1823
Acton, W., MRCS 1840
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Adams, E. B., MRCS 1850, LSA 1852
Adams, J., MRCS 1848, LFPS Glas. 1859
Adams, J., MRCS 1859, MD St. And. 1859
Adams, J. D., MRCS 1858, MD St. And. 1862
Adams, J. O., MRCS, LSA 1865
Adams, R., MRCS 1854, LRCP Edin. 1860
Addenbroke, E. H., MRCS 1866
Addison, C. E., MRCS 1862, LKQCP Ireland 1865
Ainley, D., MRCS, LM 1868
Aldrich, F. E., MRCS 1867
Aldrich, P., LSA 1835, MRCS 1859
Alger, J. S., LSA 1831, MRCS 1842
Allas, L., MRCS 1857
Allen, A. B. de Lisle, MRCS 1845
Allen, E., MRCS, LSA 1842
Allen, G., LSA 1845, MD St. And. 1856
Allen, J., MRCS 1855, LSA 1856
Allen, J. W., MRCS 1855, LSA 1857
Allen, M. H., LSA 1871
Allen, R., LSA 1833, MRCS 1834
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Amsden, J. G., LSA 1837, MD Jena 1853
Anderson, D. H. B., MRCS 1866
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Andrew, J., MD Oxon. 1863, FRCP 1866
Andrew, J. M., MRCS 1855
Andrew, W. W., MRCS 1860, MB Cantab. 1861
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Angier, G. A., MRCS 1861, MD St. And. 1862
Angier, J. H., MRCS, LSA 1826
Angove, E. S., MRCS 1867, LM 1869
Antrobus, D., LSA 1836, MRCS 1859
Archer, G. E., MRCS, LSA 1870
Archer, J., LSA 1830, FRCS 1859
Archer, L. H., MRCS 1851
Archer, T. B., MRCS 1869
Arding, W., MD Edin. 1827
Armstrong, J., MRCS 1828, MD Aber. 1851
Armstrong, S., MRCS, LSA 1861
Arnold, J., MRCS 1861, LRCP 1866
Arnold, J., MRCS 1867
Ascroft, E. H., MRCS, LSA 1830
Ashford, J. B., MRCS 1843, MD Aber. 1851
Ashton, J. H., MRCS 1868
Atherley, J., in practice prior to 1815
Atkinson, R., LSA 1822, MRCS 1823
Attfield, G., MRCS 1850
Attwater, A. W., MRCS 1869
Atwood, W. A., MRCS 1860, LRCP Edin. 1869, LSA 1869
Austin, T. J., LSA 1842, MRCS 1843
Aylen, T. V., LSA 1871

Badger, S., MRCS, LSA 1844
Badley, J. P., MRCS, LSA 1847
Bage, W. F. J., LSA 1828, MRCS 1830

Bagg, G. W., MRCS 1843, LSA 1845
Bailey, F. C., LSA 1860, MRCS 1864
Bailey, J., LSA, MRCS 1833
Baillie, A., MRCS 1825
Baillie, M. T. B., LSA 1849, MRCS 1858
Bainbridge, W., MRCS, LSA 1833
Baker, A., MD Montreal 1848
Baker, A., MRCS 1837, FRCS 1852
Baker, H. F., MRCS LSA 1869
Baker, R., LSA 1820, MRCS 1821
Baker, R. L., LSA 1841, FRCS 1861
Baker, S. I., MRCS, LSA 1853
Baker, T. J., LSA, MRCS 1833
Baker, W., MRCS 1811
Baker, W. M., MRCS 1861, FRCS 1864
Baldock, A., LSA 1871
Balkwill, W. E., MRCS, LSA 1872
Ball, D., LSA 1824, MRCS 1825, FRCS 1844
Baller, J. H., MRCS 1829, MD St. And. 1861
Baly, G., MRCS 1855
Bancks, T., LSA 1834, FRCS 1860
Banks, W. R., LSA 1853, MD St. And. 1855
Barbeau, A., MRCS 1851
Barford, J. G., MRCS 1857, LRCP 1861
Barker, E., LSA 1823. FRCS 1849
Barker, E., jun., MRCS 1856, LSA 1858
Barnes, C. H., LSA 1823, FRCS 1852
Barnes, F. W., MRCS 1845
Barnett, H., LSA 1828, MRCS 1834
Barreau, F. H., MRCS 1859
Barrett, C. A., MRCS 1854, LSA 1859
Barringer, T. S., MRCS 1839, LRCP Edin. 1860
Barringer, T. S., LSA 1869
Barrow, B., MRCS 1836, FRCS 1862
Barsham, J. B., MRCS, LSA 1836
Barter, C. S., LSA 1859, FRCS 1865, MB Lond. 1866
Barter, T., LSA 1825, MRCS 1826
Bartlam, E. G., MRCS 1839, LSA 1840
Bartleet, E., LSA 1824, FRCS 1852
Bartley, R. T. H., LSA 1840, MD St. And. 1845
Barwise, J., LSA 1840, MD St. And. 1862
Basley, C., MRCS, LSA 1840
Bass, A., MRCS 1852, MD St. And. 1857
Bateman, H., LSA 1828, FRCS 1855
Bateman, F., MRCS, LSA 1866, MB Lond. 1866
Batt, A., MRCS 1852, MD St. And. 1857
Batt, C. D., MRCS, LSA 1867, MB Lond. 1868
Batten, R. W., MRCS 1857, MD Lond. 1860
Batten, W., LSA 1832
Batty, B., MRCS 1815
Battye, W., MRCS 1864
Baxter, H. F., MRCS 1838
Bazeley, W., MRCS 1861, LSA 1862
Beach, H., LSA 1828, MRCS 1829
Beadnell, G. D., MRCS, LRCP Edin. 1872
Beale, J. S., MRCS 1846, LM 1853
Beale, T. M., LSA 1855, MRCS 1856
Beamish, J. M., MD Dub. 1868, MRCS 1871
Beard, C. T., MB Cantab. 1855, MRCP 1859
Beattie, H.M., MRCS 1861, MD St. And. 1862
Beckett, F.M., MRCS 1864
Beckinsale, J. E., MRCS 1833, LSA 1832, FRCS 1859
Bedwell, H., MRCS 1840, FRCS 1860
Bedwell, J. R., LSA 1831, MRCS 1832
Beecroft, J., MRCS, LSA 1847
Bell, G. W., MD. Edin. 1835
Bell, J., LSA 1825
Bell, W. J., MRCS 1868
Bendall, J., MRCS 1861, LSA 1862
Benfield, T. W., MRCS 1843, FRCS 1859
Bennett, J. H., FRSE, MD Edin. 1837
Bennett, F. G., MRCS, LSA 1864
Bennett, F., MRCS 1854
Bennett, G. J., MRCS 1859, LSA 1860
Bennett, J., MRCS, LSA 1839
Bennett, C. J., MRCS, LSA 1868
Berridge, E., MB Lond. 1867
Berry, S., LSA 1830, FRCS 1852
Best, F. A., MRCS 1863, LSA 1864
Best, H. D., MRCS, LSA 1855
Betham, J., MRCS 1855
Bett, R. L., MRCS 1859
Beveridge, J. E., MRCS 1836
Bewley, C., MRCS 1852, LSA 1856
Bickersteth, E. R., MRCS 1851, FRCS Edin. 1855
Bicknell, H., MRCS 1855
Bidden, R. C., MRCS 1834
Billett, J., in practice prior to 1815
Bird, H., LSA 1834, FRCS 1858, Ext. LRCP Lond. 1858
Bird, J., LSA 1821, MRCS 1825
Bird, J., MRCS, LSA 1834
Birt, A. W., MRCS 1862
Bishop, E., MD Erlang. 1856
Bishop, S. O., MRCS 1872
Black, P., MD Oxon. 1839, FRCP 1845
Blackman, F., MRCS 1854, LSA 1855
Blackman, F., MRCS 1856, LM 1858
Blackmore, H. P., MRCS 1857, MD St. And. 1857
Blackmore, S., LSA 1828, MD St. And. 1852
Blaker, E. S., MRCS 1859, LRCP Edin. 1860
Blaker, H. M., MRCS 1839, LSA 1840
Bland, G., LSA 1871, MRCS 1872, LRCP 1872
Bland, W. C., LSA 1871
Blasson, T., LSA 1823, FRCS 1853
Blenkinsop, H., LSA 1834, FRCS 1852
Bletchly, W. E., MRCS, LSA 1862
Blomfield, J., MD Aber. 1855, FRCS 1855
Bloxam, J. A., MRCS 1864, LSA 1866, FRCS 1871
Blue, W. A. S., MRCS 1868, LRCP Edin.
Blundell, J. W. F., MD Giessen 1851, LRCP Edin. 1859
Blundell, T. L., MRCS 1812, MD Glasg. 1826, FRCS 1852
Blunt, T., MRCS 1863, MD Edin. 1865
Blyth, E. J., MRCS, LSA 1850
Bodilly, J. D., MRCS 1857, LSA 1860
Bodington, G., LSA 1825, LRCP Edin. 1859
Bodman, J. B., LSA 1834
Bodman, F. H., MB Aberd. 1870

Bogg, J., LSA 1821, MRCS 1822
Bond, E. T., MRCS, LSA 1820
Bond, F., St. Q., MRCS, LSA 1858
Bond, H. J. H., MD Cantab. 1831, FRCP 1835
Bond, W. Y., LSA 1817
Boodle, R. H., MRCS, LSA 1843
Bore, G. H., LSA 1834, MRCS 1835
Borrett, J., MRCS 1827, MD Edin. 1830
Bossy, A. H., LSA 1851, MRCS 1859
Bostock, A. S., MRCS 1867, LSA 1868
Bostock, E. J., MRCS 1864, LSA 1865
Bostock, J. A., MRCS 1838
Bott, T., LSA 1829, MRCS 1830
Boughton, J. H., MRCS 1848
Boulton, D. F., MRCS, LSA 1866
Bowen, W., MRCS 1855
Bowes, R., MRCS, LSA 1831
Box, J., LSA 1826, MRCS 1827
Bradford, H., MRCS 1871
Bradford, R., MRCS 1868
Bradshaw, A. F., MRCS 1857
Brake, W. N., MRCS 1844
Bramley, L., LSA 1829, FRCS 1853
Brash, E. A., MRCS 1870
Bratt, W., MRCS, LSA 1849
Brendon, P., MRCS 1817, FRCS 1852
Brent, R., MRCS 1844, MD St. And. 1845
Brereton, C. Le Gay. MRCS 1851
Brewer, A., MRCS 1832, LSA 1834
Brewer, A. H., MRCS 1864, LRCP 1865
Brewer, C. C., MRCS 1864, LSA 1865
Brewer, H. M., MRCS 1864, LSA 1865, LRCP 1868
Brewer, J., LSA 1825, FRCS 1852
Brewer, T., MRCS, LSA 1863
Brewer, W. H., MRCS 1839
Brickwell, C. J., LSA 1832, MRCS 1833
Brickwell, H., MRCS 1839
Brickwell, J., LSA 1829, MRCS 1830
Brickwell, J., senr., MRCS, LSA 1829
Brickwell, J., MRCS, LSA 1856
Brickwell, E. A., MRCS, LSA 1868
Bridgeman, H. E., MRCS 1871
Bridger, J., LSA 1857, MRCS, LM 1859
Brigstocke, R. W., MRCS, LSA 1859
Brine, J. E., MRCS 1844, LSA 1845
Bringloe, C., MRCS 1851, LSA 1852
Briscoe, J., MRCS 1842, LSA 1844
Broadbent, J. C., MRCS 1862, LKQCP Ire. 1864
Brodhurst, B. E., MRCS 1844, FRCS 1859
Bromley, F., MRCS 1853, LSA 1854
Brook, C., MRCS, LSA 1861
Brooke, C., FRS, MA Cantab. 1827, FRCS 1844
Brookman, H., MRCS 1820, LRCP 1842
Broughton, F., MRCS 1841, FRCS 1857
Broughton, R. D., MRCS, LSA 1865
Brown, F. W., MRCS 1861
Brown, J. A., MRCS, LSA 1851
Brown, J. M., MRCS 1851
Brown, J. W., MRCS, LSA 1861
Brown, R. G., MRCS, LSA 1854
Brown, N. B., LSA 1829, MRCS 1830
Browne, B., LSA 1832, LRCP Edin. 1859
Brownless, A. C., MRCS 1841
Bruce, J., MRCS 1863
Brunskill, W., LSA 1823
Brush, J. R., MD Heid. 1839, FRCS, MRCP 1860
Bryan, E., LSA 1863, MRCS 1864
Bryan, J. M., MRCS 1833, MD Aber. 1852
Buchanan, W., LSA 1814, MD Erlang. 1841
Buck, H. J., MRCS 1859, LRCP Edin. 1860
Buckle, F., MD St. And. 1862, LRCP 1863
Bucknill, H. W., MRCS, LSA 1851
Budd, S. P., MRCS 1868, LSA 1869
Bullmore, F. C., LSA 1830, MRCS 1831
Bulmer, W., LSA 1828, MRCS 1829
Bunn, W. P., MRCS, LSA 1819
Burd, E., MB 1851, MRCS 1854 MD Cantab. 1859, MC 1863
Burgess, J., MRCS 1843, MD Aber. 1847
Burlton, T., LSA 1834, FRCS 1854
Burman, T. S., LSA 1836, MRCS 1838
Burn, W. B., MRCS 1865, MB Lond. 1871
Burroughs, J. B., LSA 1827, MRCS 1828
Burrows, G., FRS, MD Cantab. 1831, FRCP 1832
Burrows, W. A., LSA 1852, MRCS 1859
Burt, G. R., LSA 1835, LRCP Edin. 1860
Burt, S. J., MRCS 1830, LSA 1853
Burton, B. T., MRCS 1839, LSA 1840
Bury, J. W., MRCS 1858, MD Giessen 1865
Bush, E., LSA 1828, MRCS 1829
Bush, J., LSA 1867
Bushnan, J. S., LRCS 1830, MD Heid. 1836
Buswell, R., LSA 1853, MRCS 1854
Butcher, W. D., MRCS 1868
Butler, C., LSA 1868, MRCS 1871
Butler, W. H., MRCS 1829
Butler, T. M., MRCS, LSA 1860
Butlin, C. H., MRCS 1863
Butlin, H. T., MRCS 1867, LRCP 1868, FRCS 1871
Button, B., MRCS, LSA 1847

Caird, T. W., MRCS 1850, LSA 1851
Caird, W., LSA 1825, MRCS 1826
Callaway, E., MRCS 1858, LSA 1861
Callaway, Rev. H., MRCS 1842, MD Aber. 1853
Callender, G. W., FRS, MRCS 1852, FRCS 1855
Cam, T., MRCS 1837, FRCS 1844
Camden, G. J., LSA 1825, MRCS 1826
Campion, H., MRCS 1856
Candy, J., LSA 1827, MD Aber. 1860
Cann, T., MRCS 1859, MD St. And. 1860
Cape, L., MD Edin. 1833, FRCP Lond. 1857
Carden, H. D., MRCS 1829, FRCS 1843
Carter, A. P., MRCS 1858, LSA 1859
Carter, D. D., LSA 1830, MRCS 1831
Carter, J., LSA 1836
Cartwright, J. T., MRCS 1832, LSA 1834
Cary, W. H., LSA 1823, MRCS 1825
Cattell, T. W., MRCS, LSA 1831
Cattlin, W., jun., MRCS 1859, LDS 1860
Cautley, J., MRCS 1852, MD St. And. 1852
Cautley, W. C., MRCS, LSA 1849

Chadwick, C., MD Edin. 1837, FRCP Lond. 1866
Chadwick, P. C., MRCS, LSA 1835
Chamberlaine, J., LSA 1852, MRCS 1860
Chance, F., MB Camb. 1855, FRCP Lond. 1863
Chapman, E. G., MRCS 1848, LSA 1849
Chapman, G., LSA 1822, MRCS 1823
Chapman, H. T., MRCS 1828, FRCS 1843
Chapman, T., LSA 1829, MRCS 1840
Chappell, J. J., MRCS 1857, MD St. And. 1859
Charlton, E., MD Edin. 1836, MD Durham 1856
Chatto, J., MRCS, LSA 1832
Chavasse, T., LSA 1822, FRCS 1844
Cheese, J., MRCS 1860
Cheyne, G. E., MRCS 1871
Cholmeley, W., MD St. And. 1850, MRCP 1859
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Clark, J. L., LSA 1835, MRCS 1854
Clark, R. O., MRCS, LSA 1848
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Clarke, J. S., LSA 1833, MRCS 1838, MD Aberd. 1851
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Close, H. A., MRCS 1859, LRCP 1863
Clubbe, W. H., MRCS, LSA 1850
Coalbank, T., MRCS, LSA 1866
Coates, G., LSA 1827
Coates, G. V., LSA 1852, MRCS 1854
Coates, M. G. W., LSA 1836, MRCS 1838
Coates, W. M., LSA 1832, MRCS 1833
Coates, Rev. G. A. A., BA Oxon. MRCS 1864
Coathupe, C., MRCS 1862
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Cockey, E., MRCS, LSA 1842
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Coleman, A., MRCS, LDS 1860, FRCS, 1868
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Collins, C. H., LSA 1845, MRCS 1846
Collins, J. B., MRCS, LSA 1860
Collyns, G. N., MRCS, LSA 1855
Collyns, J. B., MRCS 1845, LSA 1846
Collyns, W., LSA 1844, MRCS 1845
Colquhoun, A. G., MRCS 1861
Colthurst, J., LSA 1831, FRCS 1844
Combe, H., MRCS 1808
Compton, T. A., MRCS 1834, LRCP 1865
Cooke, A., LSA 1852, MD Albany 1853
Cooke, A. S., LSA 1863, MRCS 1864
Cooke, E. H., MB Aberd. MRCS 1870
Cooke, W., MRCP 1866, MD St. And. 1822
Cooke, W., MRCS 1822, LM 1860
Cooke, W. R., MRCS 1838, LSA 1839
Cooke, W. H., MRCS 1855, MD Aber. 1860
Coombs, J., MRCS 1859, MD Erlang, 1864
Coombs, R. H., LSA 1866, MRCS 1867
Cooper, A., MRCS 1861, FRCS 1870
Cooper, Sir H., MRCS 1830, MD Lond. 1841
Cooper, F. S., LSA 1839, FRCS 1854
Cooper, W. W., MRCS 1838, FRCS 1846
Coote, H., MRCS 1838, FRCS 1844
Cope, R., MRCS 1857
Copeland, G. F., MRCS 1832
Corfe, G., LSA 1831, MD Aber. 1849
Cornish, S. H., MRCS 1854, LSA 1856
Cornwall, J., MRCS 1840, LSA 1841
Corrie, A. T., LSA 1871
Corsellis, N. C., LSA 1820, MRCS 1831
Costall, J., MRCS 1816
Costelloe, D., MRCS 1867
Costerton, H., MRCS 1852, LSA 1857
Cotterell, T. R., MRCS 1837, LSA 1845
Cotterell, T. S., MRCS 1833, LSA 1834
Cotton, T., MRCS 1860, MD St. And. 1861
Courtney, C. F. A., MRCS, LSA 1847
Coveney, J. H., MRCS, LSA 1843
Covey, C. E., MRCS 1863, LSA 1865
Covey, G., MRCS 1830
Covey, G., jun., MRCS 1864, LSA 1865
Covey, W. H., MRCS 1826, FRCS 1852
Cowen, H. L., MRCS 1839, FRCS 1859
Cowley, J. S., LSA 1871
Craven, R. M., MRCS 1846, LSA 1847
Crawford, D., MRCS 1820
Cregeen, J. J., LSA 1851, MD St. And. 1853
Cresswell, J., MRCS, LSA 1841
Cripps, E., MRCS 1845, LSA 1846
Cripps, W. H , MRCS 1872
Croft, J. McG., MRCS 1846, MD Aber. 1856
Croft, R. C., MRCS 1853, LRCP Edin. 1859
Crompton, S., MRCS 1833, MD St. And. 1862
Crookes, J. F., MRCS 1833, FRCS 1843
Cropp, F. J., MRCS 1864, LRCP Edin. 1864
Crosby, T., MRCS 1831, LSA 1832
Cross, W., LSA 1837, FRCS 1852
Crosse, T. W., LSA 1847, FRCS 1860
Crowfoot, E. B., MRCS, LSA 1867, MB Lond. 1868
Crowfoot, W. E., LSA 1828, FRCS 1845
Crowfoot, W. J., MRCS 1813, MD Leyden 1830
Crowfoot, W. M., MRCS 1858, MB Lond. 1859
Cuddeford, T., MRCS, LSA 1865
Cuffe, R., LSA 1852, MRCS 1856
Culling, R., MRCS 1843, LSA 1860
Cumberbatch, A. E., MRCS 1870, MB Lond. 1871, FRCS 1872
Cumming, A. J., MRCS 1842
Cupiss, F. P., LSA 1850, MRCS 1851
Curgenven, J. B., MRCS, LSA 1852
Curling, T. B., FRS, FRCS 1843
Currie, J. L., MRCS 1863, LRCP Lond. 1864
Currie, J. T., LFPS Glas. 1838
Curtis, A., MRCS 1857, LSA 1860
Curtis, C. E., MRCS 1865, LSA 1869
Curtis, F., MRCS, LSA 1822
Curtis, W., LSA 1824, MRCS 1825
Cutcliffe, J. L., MRCS, LSA 1847

Daglish, G., LSA 1826, FRCS 1853
Dain, F. R., MRCS 1839, LSA 1843
Dalley, C. T., MRCS 1864, LSA 1865
Dakeyne, B. B., MRCS 1833, LSA 1834
Dalley, W. C., LSA 1823
Dalley, W. C., jun., MRCS, LSA 1855
Daly, O., FRCSI 1844, MD Dublin 1857
Daniel, J. S., LSA 1825, FRCS 1852
Daniel, T. P., MRCS 1858, LSA 1859
Daniel, W. J., MRCS, LSA 1856
Daniel, W., LSA 1861, MRCS 1862
Daniell, W., LSA 1838, MRCS 1840
Daniell, W. A., MRCS 1866
Daniell, W. C., MRCS 1856, LSA 1857
Dansey, G. F., MRCS 1861
Dashwood, W. H., MRCS 1858
Davenhill, R. S., LSA 1870, MRCS 1871
Davenport, C., MRCS 1852, LRCP Edin. 1860
Davey, A. G., MSCS 1860, MD St. And. 1862
Davey, J. G., LSA 1833, MD St. And. 1863
Davey, R. G., LSA 1830, MRCS 1856
Davey, R. S., LSA 1853, MRCS, LM 1855, MD St. And. 1862
Davies, F., LSA 1834, FRCS 1852, MD St. And. 1862
Davies, H., MRCS, LSA 1860, LRCP 1871
Davies, H. H., MRCS, LSA 1858
Davies, J., MRCS 1819, MD Aber. 1850
Davies, J., MD Aber. 1845
Davies, N. E., MRCS, LSA 1866
Davies, T., MRCS 1864
Davies, T. G. D., LSA 1852, MRCS 1853
Davies, T. H. W., MRCS 1864, LSA 1865
Davies, W., MRCS, LSA 1847
Davies, W. B., MRCS 1869, LRCP, LSA 1870
Davis, A. A., MRCS 1854, LRCP Edin. 1859
Davis, C. J., MB, CM Aberd. 1870
Davis, E., in practice prior to 1815
Davis, T., MRCS, LSA 1823
Davis, T., jun., MRCS 1855, MD Lond. 1861
Davy, J. W., LSA 1829
Dawson, J., LSA 1831, MRCS 1860
Dawson, R. H., MRCS, LSA 1861
Dawson, T., MRCS, LSA 1835
Dawson, W., LSA 1834, MRCS 1835
Dawson, W. H., MRCS, LSA 1860
Day, J. S., LSA 1841
Dayman, H., LSA 1832, FRCS 1854
Dayman, B., MRCS 1870, LRCP 1871
Deane, J., MRCS 1834, MD Glas. 1854
Deane, R., LSA 1828
Dearden, J., MRCS, LSA 1856
Dearden, J., MRCS, LSA 1858
De Crespigney, E. C., MRCS 1845
Denne, T., MRCS 1857
Denny, C. J., LM Dub., MRCS 1864
Denny, J., MRCS 1857, LRCP Edin. 1860
Dew, E., MD Edin. 1831, MRCP 1831
Dewes, E., MRCS 1843, MD Glas. 1844
Diamond, H. W., LSA 1829, MD Kiel 1834
Diamond, J. R., MD St. And. 1853
Dicken, J., FRCS 1843
Dickenson, T., LSA 1819
Dingley, W., MRCS, LSA 1850
Diver, T., LSA 1857, MD St. And. 1858
Dixon, C., LSA 1816, MRCS 1819
Dixon, T. G., MRCS 1841, MD St. And. 1853
Dobell, H. B., MRCS 1849, MD St. And. MRCP 1856
Dolton, W. B., MD Heild. MRCP 1859
Donald, J. R., LSA 1838, FRCS 1865
Doran, A. H. G., MRCS, LSA 1871
Douglas, R., LSA 1823, MRCS 1825
Dover, F., MRCS 1829, FRCS 1843
Dowker, F. W., MRCS, LSA 1859
Dowling, T., LSA 1823, MRCS 1860
Drage, C., MRCS 1848, MD Aberd. 1857
Drake, A., LM Dub. 1848, MB Cantab. 1849
Druce, W., LSA 1857
Ducket, C. A., MRCS 1852, MD St. And. 1862
Duckworth, D., MD Edin. 1863, FRCP Lond. 1870
Dudley, J. G., MRCP 1859, MD Cantab. 1860
Dudley, W. L., MRCS 1846, MD St. And. FRCS 1860
Duff, W. H., MRCS, LSA 1838
Dunderdale, W., MRCS 1852, MD St. And. 1862
Dunn, A., MRCS 1862
Dunn, C. B. N., MRCS 1860
Dunn, G., MRCS, LSA 1848
Dunn, W. A., MRCS, LSA 1872
Dunne, F. W., MRCS 1855, LSA 1856

Eaton, F. J., MRCS 1855, LSA 1858
Eaton, J. C., MRCS, LSA 1866
Earle, E. S., MRCS 1856, FRCS 1860
Ebbage, LSA 1833, FRCS 1858
Eccles, A., MRCS 1843, FRCS 1858
Eccles, G. H., MRCS 1862, LRCP Edin. 1865
Eccles, J. H., MRCS, LSA 1839
Eccles, W. S., MRCS 1864, LSA 1865
Eck, V. F., MRCS 1864, LRCP 1868
Edgington, G. W., LSA 1818
Edis, W., MB Lond. 1861
Edis, A. W., MB Lond. 1863
Edkins, C., LSA 1832, MRCS 1833
Edlin, E. H., MRCS, LSA 1862
Edmunds, J., MRCS 1852, LSA 1852
Edwardes, C. L., MRCS 1856, LSA 1858
Edwardes, T., MRCS 1835, LSA 1837
Edwards, C. T., MRCS 1833
Edwards, H. N., MRCS 1864, LSA 1865
Edwards, D. P., MRCS 1828, FRCS 1860
Edwards, H. J., MRCS, LSA 1857
Edwards, W., MRCS, LSA 1861
Edwards, W. H., MRCS 1869, MB & CM Aberd. 1871
Edye, S., MRCS 1859, LSA 1860, FRCS 1870.
Eland, J. L., MRCS 1836
Eldershaw, F., MRCS 1860
Elkington, T., MRCS 1854, LRCP Edin. 1860
Elliot, R. L., MRCS 1852, LRCP 1863
Elliott, J., LSA 1826, MRCS 1827
Elliott, G. MRCS 1862
Elliott, W., LRCS Edin. 1815, MD 1828
Elliott, E., MRCS 1839, MD Aberd. 1852
Elliott, G. H., MRCS, LSA 1863

Elliott, J. R., MRCS 1862, LRQCPI 1863
Elliott, P. MRCS 1834
Ellis, H. D., MRCS 1861, LSA 1863
Ellis, T. S., MRCS, LSA 1861
Ellis, W. H., MRCS, LSA 1866
Ellison, J., MRCS 1840, MD Lond. 1845
Else, J. O., MRCS ,LSA 1825
Empson, E., LSA 1819, MRCS 1842
English, T., MRCS 1848, MD St. And. 1849
Etheridge, G. E. F., MRCS, LSA 1869
Evans, A., MRCS, LSA 1857
Evans, C. J., MRCS, LSA 1856
Evans, E. R., LRCS 1867, MRCP, LSA 1870
Evans, E. T., MRCS 1867
Evans, F. G., MRCS, LSA 1849
Evans, G., MRCS 1820
Evans, G. F., MD Cantab. 1839, FRCP 1859
Evans, G. H., MRCS 1868, FRCS 1872
Evans, H. N., MRCS 1860, MB Oxon. 1862
Evans, H. N., MD Glas. 1824, FRCS 1845
Evans, J. MRCS 1868
Evans, J. T., MRCS 1864, MD Aberd. 1865
Evans, L. D., MRCS 1872
Evans, L. E., MRCS 1867
Evans, N., MRCS 1859, MD St. And. 1859
Evans, O., MRCS 1827, MD Erlang. 1839
Evans, S. H., LSA, MRCS 1834
Evans, T., MRCS 1842, LSA 1844
Evans, T., MRCS 1837, LSA 1838
Evans, T., MRCS, LSA 1837
Evans, T. J., LSA 1823, MRCS 1825
Evans, T. M., MRCS, LSA 1861
Evans, W. H., MRCS 1869
Evans, W. L., MRCS 1862
Evers, C., MRCS 1861, MD St. And. 1862
Ewbank, F., MRCS, LSA 1867
Exell, E., MRCS 1866
Eyles, R. S., MSA 1812

Fairbank, T., MRCS 1864, MD Lond. 1865
Fairbank, W., LSA 1872
Fairless, H. W., MRCS 1864
Falconer, R. W., MRCP 1860, MD Edin. 1859
Falwasser, F., MRCS 1858, FRCS 1866
Farncombe, W., MRCS 1852
Farr, J., in practice prior to 1815
Farrar, C., LFPS Glas. 1854, MD Heidl. 1854
Farre, A., FRS, MB 1833, MD Cantab. FRCP 1843
Farre, F. J., MD Cantab. 1837, FRCP 1838
Farrington, A. C., MRCS 1865
Farrington, W. H., MRCS 1859, MD St. And. 1862
Farwell, J., MRCS, LSA 1829
Favell, W. F., MRCS, I SA 1853
Feltham, C., MRCS 1871
Fendick, T. R., LSA 1872
Fenn, E., MRCS, LSA 1861
Fennell, T., MRCS 1865, LSA 1866
Fenton, H., MRCS, LSA 1844
Ferreday, T., LSA 1827, FRCS 1845
Ferris, G. T., MRCS 1837
Field, A. F., MRCS, LRCP Edin. LSA 1868
Finch, J. E. M., MRCS 1865, LSA 1866
Firth, G. W. W., LSA 1835, FRCS 1845
Fish, J. C., MRCP 1862, MD Cantab. 1870
Fisher, F., MRCS 1856
Fisher, F. A., MRCS 1869
Fitzgerald, C. E., MRCS 1856, MD St. And. 1862
Fletcher, M., LSA 1817, MRCS 1818
Foote, C. N., MRCS 1849, MD St. And. 1862
Foquett, H. R., MRCS, LSA 1852
Ford, B. B., MRCS 1860
Forder, J., MRCS 1818
Forshall, F. H., MRCS 1855, LRCP 1863
Forster, J. E., MRCS 1850
Fortescue, W. MRCS 1837, FRCS 1852
Foster, W. F., MRCS, LSA 1857
Fowke, F. G., LSA 1836
Fowler, O., MRCS 1835, LSA 1836
Fowler, O., MRCS 1863
Fowler, W., MRCS 1813
Fox, D., LSA 1821, FRCS 1843
Fox, G. F., MRCS 1843, LSA 1846
Fox, L. O., LSA 1833, MD St. And. 1859
France, W. H., MRCS 1860, LSA 1861
Francis, J., LSA 1834, MRCS 1835
Francis, M., MRCS 1846, LSA 1852
Franco, M. R. F., LSA 1832
Franey, E., MRCS, LSA 1858
Franklin, A. W., MRCS 1836, LSA 1837
Franklin, H., LRCP Edin. LSA 1867
Freeman, J., LSA 1839, MD Erlang. 1841
Freeman, R. T., MRCS 1864, LRCP Edin. 1865
Freeman, S., LSA 1825, MRCS 1827
Freeman, T. A., LSA 1836, MRCS 1859
Freer, A., MRCS 1850, LSA 1852
Freer, R. L., MRCS 1839, LSA 1840
Freer, T., LSA 1822, MRCS 1828
Freer, W. C., LSA 1840, MRCS 1841
Freston, R. S , LSA 1871
Fryer, T. W., MRCS 1854, LSA 1856
Fulcher, G. A., MRCS 1853, LSA 1853
Fullerton, J. C., LSA 1828
Furnell, M. C., MRCS 1850, FRCS 1870
Furley, E., LSA 1834, MRCS 1835, FRCS 1844, MD St. And. 1856
Furner, W., MRCS, LSA 1871
Furnivall, E. T., MRCS 1855

Gabb, A. W., MRCS 1843, LSA 1844
Gabb, D. H., MRCS 1845, LSA 1846
Gabb, F. E., MRCS, LSA 1862
Galton, J. C., MRCS 1866, MA Oxon.
Galton, R. C., MB Cantab. 1856, MRCP 1857
Gardiner, G. G., MRCS 1857, MD St. And. 1862
Gardner, J. T., LSA 1823, MRCS 1824
Gardner, S., MRCS 1861
Garlike, S. W. R., MRCS 1863
Garlike, T. W., MRCS 1839, FRCS 1858
Garlick, W., MRCS 1864
Garrett, W. J., MB Lond. 1867
Garrington, W. H., LSA 1826, MRCS 1845
Gaskell, R. A., MRCS, LSA 1849

Gatehouse, C., MRCS 1821, LSA 1819
Gatty, W. H., MRCS, LSA 1851
Gaved, A., MRCS 1846
Gay, J., MRCS 1841, LSA 1842
Gay, J., MRCS 1834, FRCS 1843
Gaye, C., MRCS 1819, LSA 1818
Gaye, H. S., MRCS, LSA 1850
Gaye, W., LSA 1818
Gayleard, J., LSA 1833, MRCS 1834
Gee, S. J., MD Lond. 1865, FRCP 1870
George, H., LSA 1850, MD St. And. 1862
George, H., LSA 1834
George, R. F., MRCS, LSA 1820
Geoghegan, R. T., MRCS 1863, LM Dublin
Gerrans, J. G., LSA 1831, MRCS 1832
Gibb, Sir G. Duncan, Bart. MD Montreal 1846 MRCP 1859
Gibbs, J. H., MRCS 1835, MD Aberdeen 1850
Gibbon, S., MB Cantab. 1851, MRCP 1852
Gibson, G., MRCS, LSA 1835
Giffard, D. W., MRCS 1871
Gilbertson, J. B., MRCS 1849, MD Aber. 1859
Gilbertson, R., MRCS 1840, LSA 1841
Giles, J., MRCS, LSA 1868
Giles, W. F., MRCS 1858, LSA 1860
Gillard, F. J., MRCS 1837, LSA 1838
Gillott, E. D., LSA 1830, MRCS 1831
Gimson, W. G., MRCS 1860, MD St. And. 1862
Girdlestone, T. M., FRCS 1849
Girdlestone, W. T., MRCS 1856, LSA 1857
Gisborne, H. F., MRCS 1827
Glanville, J., MRCS, LM 1868
Glasier, G. W., MRCS 1859, LSA 1860
Glencross, F. J., MRCS, LSA 1868
Glover, W. R., MRCS 1855, LSA 1861
Glynn, T. R., MRCS 1863
Goddard, L. M., LSA 1832, MRCS 1843
Goddard. R. C., MRCS 1864
Godfray, C. Le V., MRCS, LSA 1860
Godfrey, R., MRCS 1813
Godrich, F., LSA 1818, MRCS 1819
Godson, MRCS, LM 1868
Godwin, A., MRCS 1855, MD St. And. 1862
Gooch, W. H., MRCS 1834, MD Edin. 1832, B Sc. Univ. of France 1830, MRCP Lond. 1859
Goodacre, F. B., MB 1853, MD Cantab. 1860
Goodall, J., MRCS 1866, LSA 1867
Goodall, R., MRCS 1857, LSA 1859
Goodeve, H. H., MRCS 1828, FRCP 1860
Goodfellow, S. J., MD Lond. 1840, FRCP 1849
Goodsall, D. H., MRCS 1868, FRCS 1872
Goodwin, C., LSA 1834, MRCS 1845
Goodwin, J. W., MB 1849, MD Cantab. 1854
Goodwin, J. H., LSA 1836
Gore, R. T., LSA 1820, FRCS 1843
Gorham, R. V., LSA 1836, MRCS 1837
Gosse, J., MRCS 1868
Gostling, H. W., MRCS 1867
Goude, H., MRCS 1870
Goude, J. F., LSA 1837, MRCS 1838
Gover, R. M., MRCS 1856, LSA 1859
Gowar, F. R., MSA 1814
Graham, A. R., MC Cantab. 1863, MB 1864
Graham, T. H., MRCS 1841, LSA 1849
Graham, T. J., MRCS 1814, MD Glas. FRCP Edin. 1861
Grammer, S. R., MRCS 1850, LSA 1857
Grant, F., MRCS, LSA 1869
Grant, K., MD Edin. 1826, MRCS 1829
Gray, Charles, MRCS 1858
Gray, C. F., MRCS, LSA 1870
Gray, E. B., MRCS 1856, MD Oxon. 1861
Gray, T. S., MRCS 1855, MD St. And. 1857
Gray, W., MRCS 1855
Grayling, J., MRCS 1832, MD Aberdeen 1851
Greatrex, A. B. W., LSA 1852, MRCS 1855
Greatrex, A. B., LSA 1862, MD St. And. 1862
Greaves, W. T., MRCS 1831
Green, C. J., MRCS 1869, LSA 1871
Green, F. K., MRCS 1864, LSA 1866
Green, T. MD Edin. 1824, FRCS 1843
Green, J. C., MRCS, LSA 1834
Green, T., LSA 1822, MRCS 1823
Greenhill, J. R., MRCS 1860, FRCS 1864
Greeves, J., LSA 1833
Gregory, B., MRCS, LSA 1859
Grellett, C. J., MRCS, LSA 1864
Griffin, F. C. G., MRCS, MB Oxon. 1864
Griffith, S. C., MRCS 1864, MD St. And. 1847
Griffith, J. W., MRCS 1841, MD St. And. 1842
Griffith, T. T., LSA 1816, FRCS 1844
Griffiths, G. H., LSA 1849, MRCS 1850, MD St. And. 1862
Griffiths, W. H., MRCS 1861, LSA 1862
Grigg, N. B., MRCS 1860
Grime, H. A., MRCS 1840, LRCP Edin. 1860
Gross, J. E., MRCS 1857
Groves, Edward, MRCS, LRCP 1868
Gulliver, G., FRS, FRCS 1843
Guppy, T. S., MRCS 1849, MD Aberd. 1859
Gutteridge, T., LSA 1826, MRCS 1827
Gwillin, W., LSA 1819, MRCS 1821, MD Erlang. 1831

Haffenden, T., MRCS 1807
Haig, J. B., MRCS 1842
Hales, J., MRCS, LSA 1843
Hall, E., MRCS, LSA 1846
Hall, E. F., MRCS 1858, MD St. And. 1860
Hall, F. de H., MRCS, LSA 1868, MB Lond. 1869
Hall, F. R., MRCS 1852, LSA 1853
Hall, H. J., MRCS 1858
Hall, S., MRCS, LSA 1863
Hall, T. W., LSA 1839
Hall, W., LSA 1820
Hall, W., LSA 1840, FRCS 1862
Hall, W., LSA 1834, MRCS 1835
Hallowes, F. B., MRCS 1858, LSA 1860
Hallowes, P. B., LSA 1822, FRCS 1843
Hammond, C. C., LSA 1818, MRCS 1819
Hammond, E. C., MRCS 1860, LSA 1863
Hammond, F., MRCS 1860
Hammond, J., LSA 1832, FRCS 1843
Hanbury, C., jun., MRCS 1849, LSA 1850
Hands, B., LSA 1819, FRCS 1853
Hanne, J. J. A., MRCS 1868

Hanslip, T., LSA 1858, MRCS 1859
Harbroe, E., LSA 1829, MRCS 1830
Harcourt, G., LSA 1821, FRCS 1841, MD St. And. 1846
Hardey, K., MRCS 1851
Harding, J. F., LSA 1835, FRCS 1852
Harding, W. W., MRCS 1855
Hardwicke, E. J., MRCS 1866
Hardwicke, H., MRCS 1840, LSA 1841
Harington, Rev. J. D., MRCS 1861, MB Oxon. 1862
Harle, E., MRCS 1869
Harper, T., LSA 1837, MRCS 1838
Harries, C. A., LSA 1829, MRCS 1830
Harris, A., MRCS 1862
Harris, B., MRCS 1860, LSA 1861
Harris, F., MD Cantab. 1859, FRCP 1863
Harris, J. D., MRCS, LSA 1872
Harris, J. S., MRCS 1863, LKQCP Irel. 1864
Harris, R. D., MRCS 1847, LSA 1856
Harris, S., MRCS 1854, LSA 1855
Harris, T., MRCS 1815
Harris, W., LSA 1831, FRCS 1853
Harris, W. J., MRCS 1859, LSA 1860
Harrison, C., MRCS 1860, MD St. And. 1861
Harrison, C. H. R., MRCS 1834, FRCS 1843
Harrison, E. P. D., MRCS 1842, LSA 1843
Harrison, R., MRCS, LSA 1859
Harsant, M., MRCS, LSA 1837
Harston, A. D., LSA 1839, FRCS 1859
Hartill, J., LSA 1826, MRCS 1856
Hartill, J. T., MRCS, LRCP 1869
Hartill, W. H., LSA 1860, MRCS 1861
Hartley, J., MRCS, LSA 1852
Harvey, O., MRCS 1860
Harvey, R. S., MRCS 1848, MD St. And. 1861
Harvey, W., MRCS, LSA 1834
Harvey, W., MRCS 1864
Harvey, W., LSA 1872
Haslam, G. H., MRCS, LSA 1861
Hatherly, N. C., MRCS 1845, MD Aberd. 1857
Havers, J., MRCS 1837, FRCS 1849
Haviland, H. J., MB 1849, MD Cantab. 1854
Haward, F. R., MRCS, LSA 1865
Haward, W., MRCS 1854
Hawett, T., MRCS, LSA 1822
Hawkes, J., MRCS 1853, MD St. And. 1861
Hawkins, C. J., LSA 1836, FRCS 1854
Hawthorn, F., LSA 1836, MRCS 1842
Hawthorn, H. O., LSA 1831, MRCS 1842
Haycock, G., MRCS 1862, LSA 1864
Haydon, N. J., MRCS 1837, MD St. And. 1860
Hayes, H., MRCS, LSA 1842
Hayman, H., MRCS 1834, FRCS 1858
Haynes, A. E., MRCS, LSA 1869
Haynes, F. H., MRCS 1866, MB Lond. 1868, MD 1871
Hazard, J., MRCS 1852, LSA 1857
Head, R. T., MRCS, LSA 1859
Head, T., MRCS 1822, MD St. And. 1845
Head, W. C., MRCS 1871
Headley, W. B., MB & MC Cantab. 1864
Heaton, C. L., LSA 1837, MRCS 1838
Heaton, F. L., MRCS 1862, MB Oxon. 1863
Hedges, J. A., MRCS, LSA 1862
Heelas, M. L., MRCS 1866, LSA 1866
Hele, H. H., LSA 1825, MRCS 1826
Helm, G. F., MRCS 1859, FRCS 1863, MB Cantab.
Hembrough, J. W., LSA 1865, MRCS 1866
Henderson, H. G., MRCS 1863
Henderson, W., MD Aber. 1857, MRCS 1849
Hendley, T. H., MRCS, LRCP, LSA 1869
Henley, A. A., MRCS 1869
Henry, M., MRCS 1847, FRCS 1854
Hensley, P., MA, MD Cantab. 1870, FRCP 1871
Hepworth, G. A. H., MRCS, LSA 1847
Hester, J., MRCS 1853
Hester, J. T., LSA 1821, FRCS 1852
Hewer, E., MRCS 1866
Hewer, J. H., MRCS, LSA 1852
Hewlett, C., MRCS 1853
Hewlett, T., MRCS, LSA 1808
Hews, F., in practice prior to 1815
Hichens, J. S., MRCS, LSA 1851
Hickens, G. L., MRCS 1854
Hickman, T. H., MRCS 1868
Higgins, H., LM 1857, LRCP Edin. 1860
Hilder, H. H., LSA 1824, MRCS 1826
Hill, C. H. LSA 1871
Hill, R. S., MRCS, LSA 1840
Hill, T. J., MRCS 1858, LSA 1859
Hill, T., MRCS, LSA 1870
Hill, W., MRCS, LSA 1842
Hillier, J. T., MRCS, LSA 1850, LM 1853
Hilton, C. S., LSA 1862, MD St. And. 1862
Hind, H., MRCS
Hine, S. D., MRCS, LSA 1856
Hine, W. C., MRCS 1861, LSA 1862
Hingston, W., LSA 1824, MRCS 1825
Hingston, C. A., MB Lond. 1864
Hinton, J., MRCS 1848
Hitch, S., MRCS 1822, MRCP 1859
Hitchcock, C., MRCS 1834, LRCP Edin. 1860
Hitchcock, T., MRCS 1831, MRCP 1859
Hitchins, C. V., LSA 1854, MRCS 1855
Hoare, W., LSA 1826, MRCS 1827
Hoare, W., MRCS 1858
Hodges, F. S., LSA 1845, MRCS 1847
Hodgson, W., MRCS 1855, MD St. And. 1862
Hodson, C. F., MRCS 1837, LSA 1838
Hogg, A. J., MRCS, LRCP Edin. 1870
Holbrow, A., LSA 1818, FRCS 1862
Hole, J., LSA 1826, MRCS 1828
Hole, J. C., LSA 1822
Holden, G., MRCS 1856, MD St. And. 1859
Holden, L., MRCS 1838, FRCS 1844
Holland, N., LSA 1869, MRCS 1870
Holland, Sir Henry, Bart., FRS. MD Edin. 1811, DCL Oxon, LLD Cantab.
Hollis, W. A., MB Cantab. 1867, MRCP 1867
Hollis, W. P., MRCS 1861, LM 1863
Holmes, A., MRCS, LRCSJ 1858
Holmes, C., LSA 1838, FRCS 1861
Holthouse, C., LSA 1832, FRCS 1843

Holttum, C., LSA 1840, FRCS 1855
Hooper, C., MRCS 1859
Hooper, J. D., LSA 1830
Hooper, J. T., MRCS 1845, LSA 1858
Hooper, L. G., MRCS 1852, LSA 1854
Hope, H., MRCS, LSA 1864
Hopgood, P. D., MRCS, LRCP 1867
Hopkins, H. C., MRCS 1867
Hore, W., LSA 1826, MRCS 1858
Horne, T. B., MRCS 1845, LSA 1846
Horsfall, J., MRCS 1866, FRCS 1869
Hosking, R., MRCS, LSA 1852
Hoskins, E. J., MRCS 1858, MD St. And. 1860
Hoskins, H. R., LSA 1848, LRCP 1860
Houghton, J. H., MRCS, LSA 1838
Houseman, —, MRCS, LSA 1863
Howell, H. S., MRCS 1861, MD St. And. 1862
Huggins, S. J., MRCS, LSA 1870
Hue, J. W., FRCP 1856, MD Cantab.
Hughes, D. W., MRCS 1861, LSA 1862
Hughes, J. B., MRCS 1866, LSA
Hughes, H. H., MRCS, LSA 1831
Hughes, H. R., MRCS 1839
Hughes, J., LSA 1840, FRCS 1858
Hughes, J. E., LSA 1861, MRCS 1862
Hughes, T. H., LSA 1858, MRCS 1858
Hughes, W. E., MRCS 1847, LSA 1857
Hughes, W. F., MRCS 1863
Hulme, E. C., MRCS 1844, FRCS 1849
Hulme, J. D., MRCS 1849, MD St. And. 1862
Humphry, C. H., MRCS, LSA 1862
Humphry, F. A., LSA 1853, FRCS 1856
Humphry, G. M., FRS, FRCS 1844, MD Cantab. 1859
Hunt, E., LSA 1830
Hunt, H., MRCS 1840, FRCP
Hunt, T. O., MRCS 1856
Hunt, W. C., LSA 1841, MRCS 1845
Hunter, R. H., MRCS 1861, LSA 1862
Hunter, T. D., MRCS 1825, LSA 1832
Hurlock, Rev. J., MD 1816
Husband, C., MRCS 1845, LSA 1846
Husband, H. A., MRCS 1866, MB Edin. 1867
Hussey, E. L., FRCS 1849, MRCP Edin. 1859
Hutchins, W., LSA 1825, MRCS 1826
Hutchinson, F., LSA 1828, FRCS 1852
Hutchinson, J., MRCS 1850, FRCS 1862
Hutchinson, J. R., MRCS 1845, LSA 1855
Hutchinson, T., MRCS 1849, LRCP Edin. 1860
Hutchinson, W. B., MRCS 1829, FRCS 1852

Iles, A., MD St. And. 1861
Iliffe, W., MRCS 1866, LSA 1867
Ilott, E., LSA 1848, FRCS 1863
Ilott, J. W., LSA 1836, MRCS 1837
Ingman, J., MRCS 1847
Iredell, C. L. M., MRCS, LSA 1871
Ireland, J., LSA 1853
Irving, C., MRCS 1870

Jackman, T. S. H., MRCS 1848, LRCP 1867
Jackson, A., MRCS 1866
Jackson, F. E., MRCS, LSA 1872
Jackson, H., MRCS 1869
Jackson, H. E., MRCS 1870
Jackson, H. W., MRCS 1855, LSA 1857
Jackson, J. H., MRCS 1856, MD St. And. 1860
Jackson, J. T., LSA 1841, MRCS 1842
Jackson, M., MRCS, LSA 1866
Jackson, P., MRCS, LSA 1844
Jackson, R., MRCS 1832
Jackson, W., MRCS 1814, FRCS 1853
Jacob, E. L., MRCS, LSA 1855
Jacques, J. T., MRCS, LSA 1865
Jelland, R., MRCS 1854
James, E., MRCS, LSA 1853
James, E., MD Edin. 1835
James, E. M., MRCS 1860
James, H. H., LSA 1841, FRCS 1856
James, J., MRCS 1834, LSA 1862
James, J., MRCS 1862
James, J. D., MRCS, LSA 1857
James, T., MRCS, LSA 1836
James, T., MRCS, LSA 1846
Jarvis, N. H., MRCS 1867, LSA 1868
Jay, H. M., LRCP Edin., LM Edin., MRCS, LSA 1868
Jeaffreson, C., MRCS 1863, LSA 1867
Jeaffreson, H., MRCS 1860, MD Lond. 1865
Jeaffreson, J., MRCS 1862
Jeaffreson, J. B., MRCS, LSA 1858
Jeaffreson, W., MRCS 1820
Jebell, E. J., MRCS 1841
Jefferys, W. E., LSA 1848, MRCS 1849
Jenneret, H., LSA 1824, MD Edin. 1825
Jenkins, H. J., MRCS, LSA 1829
Jenkyns, C., MRCS 1861, LSA 1862
Jepson, E. C., MRCS 1835, FRCS 1855
Jerrard, J. C., MRCS 1818, LSA 1819
Jeston, A. F. W., MRCS, LSA 1824
Johnson, E. R., MRCS 1867
Johnson, J. G., LSA 1820, FRCS 1843
Johnson, T. R. R., MRCS 1851, LSA 1854
Johnston, J., MRCS, LSA 1823
Johnstone, J., MD Cantab. 1832, FRCP 1834
Jones, D., MRCS 1851, LRCP Edin. 1860
Jones, G. T., MRCS 1842, LRCP Edin. 1859
Jones, H., jun., MRCS 1853, LSA 1855
Jones, H. D., MRCS 1835, FRCS 1852
Jones, H. P., MRCS, LSA 1834
Jones, J., MRCS 1834, LSA 1838
Jones, J., MRCS, LSA 1862
Jones, M., MRCS 1855
Jones, M., MRCS 1856
Jones, M., MRCS 1861, LRCP 1861
Jones, O., MRCS 1862
Jones, O. T., MRCS 1872
Jones, R. O., MRCS, LSA 1861
Jones, R. A., MRCS 1864, LSA 1865
Jones, T., MRCS 1841
Jones, T., MRCS, LSA 1860
Jones, T. E., MRCS, LSA 1856
Jones, W., MRCS 1841, MD St. And.
Jones, W., MRCS 1863
Jotham, G., LSA 1826, MRCS 1827
Jowers, F. W., MRCS 1854, LSA
Jukes, A., MRCS, LSA 1869

Julian, J. P., MRCS 1852

Karkeek, P. Q., MRCS, LSA 1865
Kay, J., LSA 1840, MRCS 1848
Keal, W., MRCS, LSA 1854
Kelly, J., MRCS, LSA 1833
Kemp, W. G., MRCS 1867, LRCP 1868
Kesteven, W. B., LSA 1837, FRCS 1854
Kesteven, W. H., MRCS 1869
Kiernan, F., FRS, MRCS 1825, FRCS 1843
Kiernander, W., MRCS 1864
King, E. P., MRCS 1858, LSA 1859
King, F., MRCS 1848
King, R., MRCS 1844
King, W. M., MRCS 1869
Kingdon, J. A., MRCS 1849, FRCS 1861
Kinsey, R. H., MRCS 1864, LSA 1866
Kipling, W., LSA 1827
Kirkman, J. M., LRCS Edin. 1833, MRCS 1835
Kirkman, J. M., MRCS 1867
Kitching, A., MRCS 1850, MD Aber. 1860
Kite, W. J., MRCS, LSA 1846
Knapp, F. W., MRCS 1864, LSA 1866
Knight, G. T., LSA 1847, MRCS 1848
Knight, H. J., MRCS, LSA 1858
Knott, T. B., MRCS, LSA 1848
Kough, O'B., LSA 1860, MRCS 1861

La Farque, P. A., MRCS 1847, LSA 1854
Lafargue, P., MRCS 1868
Lamb, B. W., MRCS, LSA 1866
Lammiman, C., MRCS 1871, LRCP 1872
Lancaster, W. J., MRCS, LSA 1860
Lanchester, H. T., FRCS, MRCS 1861, MD Lond. 1864
Lanchester, T. W., LSA 1826, MD Erlang. 1839
Langdon, C. G., LSA 1866
Langdon, G. C., MRCS 1868
Langdon, H. W., MRCS 1854, LSA 1855
Langdon, T. C., LSA 1858, FRCS 1863
Langford, E. C., LSA 1855, MRCS 1856
Langridge, G. T., MRCS 1871
Langshaw, J. P., LSA 1837, FRCS 1854
Langton, J., MRCS 1861, FRCS 1865
Langworthy, F. W., MRCS 1868
Langworthy, G. V., MRCS, LSA 1864
Langworthy, J. M. B., LSA 1852, MRCS 1854
Langworthy, R., MRCS, LSA 1836
Langworthy, S., MRCS 1851, LSA 1852
Langworthy, W. F., jun., MRCS, LSA 1861
Lansdowne, J. G., LSA 1827, MRCS 1828
Larty, R. J., MRCS 1837, LSA 1838
Lascelles, R. M., MRCS, LSA 1836
Latham, C., MRCS, LSA 1839
Latham, J., MRCS 1823, LRCP Edin. 1860
Latham, P. M., MD Oxon. 1816, FRCP 1818
Latham, P. W., MRCP 1861, MD Cantab. 1864
Latham, R. G., MD Cantab. FRS 1850
Latham, W. H., MRCS, LSA 1870
Latten, R., LSA 1836, MRCS 1837
Lavery, T., LSA 1834, MRCS 1835
Lawrance, F., MRCS 1857, LSA 1859
Lawrence, G. R., MRCS 1862, LSA 1864
Lawrence, H. C., MRCS 1864, LRCP 1865
Lawrence, Sir J. Trevor, Bart., MRCS 1853
Lawrence, L. A., LSA 1839, MRCS 1843
Lawrence, W. F., MRCS 1841, LSA 1842
Lawton, R., LSA 1827
Laycock, W., MRCS 1837
Leach, H., MRCS, LSA 1858
Leamon, E. F., LSA 1818, MRCS 1819
Leather, P. W., MRCS, LSA 1839
Ledgard, J. A., MRCS, LSA 1831
Ledsam, J. J., MRCS 1820, MD St. And. 1851
Lee, H. B., MRCS 1833
Lee, H., LSA 1830
Lee, J., LSA 1825
Lee, J., jun., MRCS 1858, LSA 1859
Lee, N. B. C., MRCS 1857
Lee, R., LSA 1825, MRCS 1843
Lee, T. W., MRCS, LSA 1868
Leech E., MRCS, LSA 1822
Leech, H., P. MRCS, 1818, LSA 1849
Leeds, T., MRCS. LSA 1861
Legg, J. W., MD Lond. 1868, MRCP 1869
Leggatt, R. S, MRCS 1841, LSA 1842
Leigh, P., LSA 1834, MRCS 1835
Lemon, H. M., LSA 1860, MRCS 1861, MD St. And. 1861
Leppington, H. M., LSA 1830, MRCS 1831
Lestourgeon, C., LSA 1831, FRCS 1843, MA Cantab.
Leverton, E. J., MRCS, LSA 1866
Leverton, H. S., MRCS 1851, LRCP Edin. 1860
Levy, J. L., MRCS 1866, LSA 1868
Lewis, D. W., MRCS 1861
Lewis, R. B., MB Lond. 1850, MRCS 1852
Lewis, W. T., MRCS 1853, LSA 1863
Lindop, J. C., MRCS 1862, LSA 1863
Lindop, W., LSA 1829, FRCS 1856
Lindgard, A. R., MRCS 1839
Lineker, E. H., MRCS 1858, LSA 1859
Linnecar, E. H., LSA 1824, MRCS 1843
Little, J. C., MRCS 1839, LSA 1840
Little, T. S., MRCS 1842, LSA 1843
Littleton, P. R., MRCS 1868
Livett, H. W., MRCS 1837, MD Pisa 1837, LRCP Edin. 1859
Llewellyn, E., MRCS 1859
Lloyd, D., MRCS, LSA 1838
Lloyd, D., MRCS, LSA 1859
Lloyd, J. A., MRCS 1829, MD Aberdeen 1854
Lobb, H., MRCS, LSA 1850
Lock, J. G., MA Cantab. MRCS 1867, LRCP Edin., LSA and LM 1868
Locock, Sir C. Bart. MD Edin. 1821, FRCP 1836
Lombe, T. R., MRCS 1843, MD Aberdeen 1856
Long, E., LSA 1823, MRCS 1824
Long, T., LSA 1833
Longhurst, A. E. T., MD St. And. 1862, MRCS 1863
Lorimer, J. A., MRCS, LRCP 1868
Lovekin, L. F., LSA 1833, MRCS 1835
Loveless, W. K., LSA 1830, MRCS 1831
Lovell, F. H., MRCS 1865
Lowdell, C., MRCS 1847

Lowe, G., LSA 1837, FRCS 1863
Lowe, W. G., MRCS, LRCP 1870
Lowne, B. T., MRCS, LSA 1814
Lowne, B. T., jun., MRCS 1861
Ludlow, E., MRCS 1862, MB London 1864
Ludlow, T., MD St. And. 1863
Luke, H., MRCS 1858
Lush, W. G. V., MRCS 1864, MD Lond. 1866

Maberley, G. F., MRCS 1866
Macan, J. J., MRCS 1870
Macaulay, F. E., MRCS 1861, LSA 1862
McCandlish, W., MRCS 1864
McCheane, W., LSA 1844, FRCS 1868
Macilwain, G., MRCS 1818, FRCS 1843
McKechnie, A., MD Glas. 1829, MRCP 1860
McKenzie, J., MRCS 1867
Mackenzie, J. T., MRCS 1858, MB Cantab. 1861
Mackinder, D., MRCS 1847, MD St. And. 1853
Mackintosh, H.R.D., MRCS 1863, MD Erlang. 1864
M'Clean, E. H., MRCS 1867, LSA 1868
McGregor, A., MRCS 1867, LRCP Edin. 1868
McLeod, A. W., LSA 1827, MRCS 1828
M'Nab, D. R., LSA 1841, MRCS 1842
McNicoll, D. H., LSA 1836, MD Glasgow 1842
Madeley, G., S., MRCS 1867
Maling, E. H., LSA 1822, MRCS 1832
Mallet, S. E., MRCS 1861
Manby, A., LSA 1830, MRCS 1831
Manifold, W. H., MRCS 1849
Mann, R. M., MRCS, LSA 1845
Manning, J., LSA 1856, MRCS 1857
Marchant, R., MRCS 1815, LSA 1816
Margetson, P., MRCS, LSA 1835
Marrack, W., MRCS, LSA 1854
Marriott, J., MRCS 1850, LSA 1852
Marsh, A. J., LSA 1839, MRCS 1841
Marsh, F. H., MRCS 1861, FRCS 1866
Marsh, J., MRCS 1850, LSA 1856
Marshall, T. H., MRCS 1846, LSA 1849
Marson, J. T., LSA 1829, FRCS 1852
Martin, H. E., MRCS 1859
Martin, H. V., MRCS 1834, FRCS 1850
Martin, P., LSA 1863, MRCS 1864
Martin, Sir R., CB, FRS, FRCS 1843
Martin, R., MRCS 1813, FRCS 1844
Martin, R., MB 1851, FRCP 1859, MD 1859 Cantab.
Martyn, T. D., MRCS, LSA 1832
Maskelyne, H., LSA 1825, MRCS 1829
Mason, J. B., MRCS 1858, LRCP 1860
Mason, R., MRCS 1848, LSA 1856
Master, A., LSA 1837, MRCS 1838
Mathew, J. E., MRCS 1841, FRCS 1858
Mathias, J. E., MRCS 1838
Matterson, W., MRCS 1837, MD St. And. 1862
Matthews, J., LSA 1838, MD St. And. 1853
Maturin, H., MRCS 1864, LSA 1865
Maughan, J. B., MRCS 1840
Maxwell, E. C., MRCS 1866, LSA 1867.
May, A. S., LSA, MRCS 1864
May, E. C., LSA 1820, FRCS 1853
May, E. H., LSA 1854, FRCS 1856
May, J. H. S., MRCS, LSA 1859
May, J., LSA 1830, FRCS 1860
Mayne, R. F., MRCS 1854, MD Jena 1858
Mayo, C., MRCS 1861, MB Oxon 1865, MD Dubl. 1866, MRCP 1869
Mayo, C., MRCS 1811, FRCS 1844
Mead, G. B., MRCS 1854, MD Giessen 1859, FRCP 1861
Meade, H., MRCS, LSA 1860
Meade, R.H., LSA 1835, FRCS 1845
Melhado, A. C. B., MRCS, LSA 1866
Meller, C. M., MRCS 1849, MD St. And. 1862
Menzies, J. J., MRCS 1859, LRCP Edin. 1860
Mercer, A. W., MRCS 1858, LSA 1859
Mercer, E., MRCS, LSA 1851
Merry, R. R., MRCS 1860, LRCP 1864
Metcalfe, E., MRCS 1841, FRCS 1859
Michell, G. A., MRCS, LSA 1835
Michell, S. V. P., LSA 1839, FRCS 1861
Mickle, D. K., LSA 1851, MRCS 1860
Middlemore, LSA 1825, FRCS 1843
Miles, C., MRCS, LSA 1848
Miles, H. C., MRCS 1854, LRCP Edin. 1859
Miles, J., LSA 1816, MD Erlang. 1837
Miller, C. M., MD St. And. 1862
Miller, J. A., MRCS 1872
Millington, LSA 1828
Milsome, J. R., MRCS 1862, MD St. And. 1862
Mitchell, S., LSA 1820, MRCS 1821
Mitchell, T. C., MRCS 1859, LSA 1860
Mitchinson, C. C., MRCS 1859, LSA 1860
Mitchinson, G., MRCS 1851, LRQCP Ireland 1859
Mitton, M. J., MRCS 1862
Moon, R., MRCS 1863
Monro, H., FRCP 1848, MD Oxon. 1863
Montgomery, J. B., MD Glas. 1851, MRCS 1852
Moore, D. S., LSA 1841, MRCS 1842
Moore, E., MRCS, LSA 1851
Moore, E., LSA 1826, FRCS 1858
Moore, G. H., MRCS 1829, MD St. And. 1841
Moore, J., MRCS 1810
Moore, J., MRCS, LSA 1827
Moore, J. MRCS 1867
Moore, R. B., MRCS 1866, LSA, LRCP 1868
Moore, T., MRCS 1859, LRCP 1865, FRCS 1867
Moore, W., MRCS, LSA 1836
Moore, W. H., MRCS 1866
Moorhouse, J. W., MRCS 1852, LRCP Edin. 1864
Morgan, W. F., MRCS 1823, FRCS 1843
Morris, D. E., MRCS 1868
Morris, E., MRCS 1854, LSA 1856
Morris, R., MRCS 1857, LSA 1858
Morrish, T. F., MRCS, LSA 1851
Morse, A. C., MRCS 1844, LSA 1845
Mortimer, R., MRCS 1835, LRCP Edin. 1859
Moses, F. H., MRCS 1867
Moss, W. B., MRCS 1854
Mousley, G., LSA 1832, MRCS 1833

Moxon, J., MRCS 1857, LSA 1863
Mudge, B., MRCS 1863
Mudge, H., LSA 1828, MRCS 1829
Mullings, S. E., LSA 1854, LRCP E. 1860
Murrell, C. F. F., MRCS LSA 1872
Murrell, W., MRCS 1861
Muschamp, W. H., MRCS 1854
Myers, H. R., LM, LFPS Glasg. 1859

Nash, W. L., MRCS 1863
Nathan, H. F., MRCS 1860
Neatby, T., MRCS 1861, MD St. And. 1861
Needham, F., MRCS 1858, MD St. And. 1866
Ness, J., LSA 1826, FRCS 1860
Nettle, W., MRCS 1870
New, H. S., MRCS 1835, LSA 1840
Newberry, W. J., LSA 1871
Newbold, E., MRCS 1835, LSA 1838
Newman, A., MRCS 1857, MB Oxon. 1859
Newman, G., MRCS 1835, LRCP Edin. 1859
Newman, H., MRCS 1841, LSA 1842
Newman, W., MRCS 1854, FRCS 1867, MD Lond. 1859
Newton, C. J, MRCS, LSA 1870
Newton, E., LSA 1838, FRCS 1846
Newton, L., MRCS, LSA 1867
Nicholls, L., MRCS 1856, LSA 1859
Nicholson, J., LSA 1839, FRCS 1857
Nicholson, W. H., MRCS 1858
Noad, G. W., MRCS 1862, MD St. And. 1862
Norris, T. G., MRCS, LSA 1832
Norris, W., LSA 1816, MD St. And. 1828
North, W. D., MRCS 1862
Norton, H., MRCS 1869
Norton, W. A., MRCS 1862, MD St. And. 1862
Nunn, J. R., MRCS, LSA 1859
Nunn, P. W. G., MRCS 1871

Oates, J. P., LSA 1829, MRCS 1842
Odell, T., MRCS, LSA 1851
Odling, T. F., MRCS 1872
Odling, W., FRS, MB Lond. 1851, FRCS 1859
Oldfield, H., MRCS 1858
Oldham, R., MRCS 1841, FRCS 1859
Oldman, J., MRCS, LSA 1858
Oliver, R., MRCS, LSA 1861
Oliver, W. H., MRCS, LSA 1836
Orford, W. C.. MRCS 1847, LSA 1848
Orme, C., MRCS 1867, LSA 1869
Ormerod, E. L., FRCP 1851, MD Cantab. 1851
Orton, G. H., MRCS 1863, FRCS 1867, MB Lond. 1867
Orton, W., LSA 1832, MRCS 1833
Osborn, H., MRCS 1851, MRCP 1859
Osmond, T., MRCS, LSA 1863
Overton, J., LSA 1821, MRCS 1822
Owen, A. P., MRCS, LSA 1835
Owen, E. R., LSA 1834, FRCS 1857
Owen, Professor Richard, FRS, MRCS 1826 FRCS 1843
Owen, R. J., MRCS, LSA 1861
Owen, A. J., MRCS 1872

Paget, G. E., MD Cantab. 1838, FRCP 1839
Paget, Sir J., Bart., DCL, FRS, MRCS 1836, FRCS 1843
Paine, W., MRCS, LSA 1860
Palmer, C., LSA, MRCS 1866
Palmer, C., MRCS 1846, MD St. And. 1854
Palmer, E., MRCS 1839, MD St. And. 1845
Parke, J. T., MRCS 1848, LSA 1850
Parker, D., MRCS 1860
Parker, R., MRCS, LSA 1859
Parker, S., LSA 1840, MRCS 1841
Parks, J., MRCS 1834
Parnell, G. C., MRCS 1871
Parry, P., in practice prior to 1815
Parry, R., LSA 1829, MD Aberd. 1848
Parsley, W. H., LSA 1831, MRCS 1862
Parsons, E. K., MRCS 1843, LSA 1844
Parsons, F. H., MD, CM Glas. 1861
Parsons, J. St. J. G., FRCS 1858, LRCP 1859
Parsons, W. A., LSA 1826, MRCS 1828
Partridge, J. H., MRCS 1840, LSA 1841
Partridge, R., MRCS 1827, FRCS 1843
Patten, C. A., MRCS 1861, LSA 1865
Pattinson, H. B., MRCS, LSA 1866
Paull, J., MRCS 1866, LSA 1867
Paxton, F. V., MB Oxon. 1864, MRCS 1866
Payne, G. S., LSA 1830, MRCS 1831
Payne, G. S., MRCS 1871, LSA 1872
Payne, S., MRCS, LSA 1849
Peacey, W., MRCS 1872
Pearce, F. D., LSA 1832, MRCS 1833
Pearce, F. D., jun., LSA 1862, MRCS 1863
Pearce, T., LSA 1825, MRCS 1826
Pearless, C. D., MRCS, LSA 1864
Pearse, W., LSA 1840, MRCS 1860
Pearse, W. D., MRCS, LSA 1836
Peatfield, T., MRCS 1863
Peel, R., MRCS 1861
Peirce, J. E., MRCS, LSA 1868
Peirce, R. K., MRCS 1844, LM 1855
Pemberton, O., MRCS, LSA 1847
Penfold, H., MRCS, LSA 1850
Penkivil, J. H., LSA 1871
Pennington, A., MRCS, LSA 1861
Pennington, F., MRCS 1854
Pennington, T., LSA 1828, MRCS 1829
Pepler, W. B., MRCS, LSA 1853
Perkin, R. C., MRCS 1850, LSA 1851
Perrin, W. J., LSA 1825, MRCS 1856
Perrot, H., MRCS 1856
Perry, C. H.. LSA 1835, MRCS 1843
Perry, M., MRCS 1866, LSA 1867
Pettifer, E. H., LSA 1861, MRCS 1862
Philbrick, S. A., MRCS, LSA 1830
Philbrick, T., LSA 1833, MD Giessen, MRCS 1844, LRCP Edin. 1860
Phillips, G., FRCS 1855
Phillips, G. M., MRCS, LSA 1842
Phillips, J., LSA 1833, MRCS 1834
Phillips, J. W., LSA 1852, MRCS 1856
Phillips, W. E., MRCS 1867
Philpott, H. G., MRCS 1853, LSA 1854
Pickburn, T. J., LSA 1868
Picken, S., MRCS 1855, LSA 1858

Pickett, J., MRCS, LSA 1858
Pickford, J., MRCS 1828, MD Aberdeen 1852
Pierce, J. E., MRCS 1868
Pierpoint, LSA 1855, MD St. And. 1862
Pilkington, T., MRCS, LSA 1863
Pilkington, W. H., MRCS 1845, LRCP 1861
Pinchard, B., MRCS 1843, MD Aberdeen 1859
Pinder, J. B., LSA 1855, MRCS 1856
Piper, C. C., MRCS 1848, LSA 1854
Pitt, E. G., MRCS, LSA 1849, MD Aber. 1855
Place, J. L., MRCS, LSA 1866
Pocklington, E., MRCS 1860, LSA 1861
Poignand, M., MRCS 1872
Pollard, J., MRCS, LSA 1854
Pollard, W., MRCS 1843, LSA 1844
Pollock, R. J., LSA 1826, FRCS 1852
Pooley, C., MRCS 1842, FRCS 1864
Porter, J. H., LSA 1827, MD Erlang. MRCP 1859
Potter, F. D., LSA 1832, MRCS 1835
Potter, T. H., LSA 1828, MRCS 1829
Pottle, E. G., MRCS 1867, LSA 1868, LM 1869
Potts, W. J., MRCS 1861
Powdrell, J., MRCS, LSA 1864
Powell, A., MRCS 1832
Powell, F., MRCS 1853, MB Lond. 1855
Powell, H., LSA 1831, MRCS 1832
Powell, H., MRCS 1839, LSA 1840
Powell, J. J., LSA 1830, MRCS 1834
Powell, J. T., MRCS 1854, MD St. And. 1862, LRCP 1870
Powell, L., MRCS 1864
Power, F. D., MRCS 1866
Power, H., MRCS 1851, FRCS 1854, MB Lond. 1855
Power, W. H., MRCS, LSA 1864
Powne, B. L., LSA 1864, MRCS 1865
Powne, W., MRCS, LSA 1856
Pratt, G., MRCS 1845
Preston, W., MRCS 1855
Preston, W., MRCS 1866
Price, J. L., MRCS 1864, LSA 1865
Price, R. C., MRCS, LSA 1832
Price, W., MRCS, LSA 1821
Prichard, A., LSA 1840, MD Berlin 1841
Prichard, H. P., LSA 1834, MRCS 1835
Prichard, W., MRCS 1838, LSA 1839
Prideaux, A., MRCS 1834, LSA 1836
Pridham, J. W., MRCS 1860, LRCP 1862
Pridham, T. L., MRCS, LSA 1825
Prince, F. T., MRCS 1865, LSA 1866
Prince, T., LSA 1830, MRCS 1842
Pritchard, J. C., LSA 1826, MRCS 1843
Pritchard, J., MRCS, LSA 1849
Pritchett, G. M., MRCS 1839, LSA 1832
Pritchett, J. B., LSA, MRCS 1853
Proctor, A. G., LSA 1828, MRCS 1830
Proudlove, T. J., LSA 1834, LRCP 1859
Prowse, W., LSA 1848, MRCS 1849
Puddicombe, J. M., MRCS 1837, LSA 1838
Pugh, J. L. P., MRCS, LSA 1856
Pughe, H. R., MRCS, LSA 1857
Pullin, H. T. S., MRCS 1850, MD St. And. 1862
Pyne, R., LSA 1826, MRCS 1827

Quarrell, W., MRCS 1863
Quennell, J. C., MRCS, LSA 1859
Quick, J. R., MRCS, LSA 1836
Quick, J., MRCS, LSA 1866

Radcliffe, H. J., MRCS 1831, LSA 1830
Radley, W. H., MRCS, LSA 1857
Rae, Sir W. C. B., MRCS 1811, FRCS 1843
Randall, A. M., LSA 1821, MRCS 1822
Rainbird, H., MRCS 1856, LRCP Edin. 1860
Rainey, W. B., MRCS 1851, LRCP Edin. 1859
Randall, J., MB 1842, MD Lond. 1848
Randall, J. G., MRCS 1866
Randell, E. B., MRCS 1862
Randolph, C., MRCS 1871
Raven, T. F., MRCS 1864
Ray, C., MRCS 1836, MD Pisa 1838
Raymond, L., MRCS 1852
Read, A., MRCS 1866
Read, C. G., LSA 1843, MRCS 1844
Reade, A. C., MRCS, LSA 1864
Ree, H. P., LSA 1839, FRCS 1858
Reece, R., LSA 1832, MRCS 1851
Reed, G., MRCS 1858, MD St. And. 1862
Reeve, J. F., MRCS 1812
Reeve, J. F., MRCS 1846, MD Aberd. 1857
Reid, F., MRCS LSA 1872
Reid, J., MRCS 1843, LSA 1844
Reid, L. H., MRCS 1866
Rendall, C., LSA 1837
Rendell, R., MRCS, LSA 1832
Rendell, W. J., MRCS, LSA 1853
Rendle, J. D., MRCS 1846, MD St. And. 1862
Renshaw, B., MRCS, LSA 1868
Renshaw, E., MRCS 1866, LSA 1869
Reynolds, T., MD Erlang. 1863
Reynolds, H. W., LSA 1822, MRCS 1843
Rhind, S., MRCS 1852, LRCP Edin. 1859
Rice, B., MRCS 1852, MB Lond. 1852
Richards, O., LSA 1834, MD Aberdeen FRCS 1848
Richardson, W. H., MRCS 1859, LSA 1860
Ridley, J. S., MRCS 1858, MD St. And. 1859
Rigden, G. C., MRCS, LSA 1839
Riley, F. L., LSA 1872
Riley, H., LSA 1831, MRCS 1860
Ringer, B. S., MRCS 1869, LSA 1870
Riscoe, R. B., MRCS 1846
Robarts, H. P., LSA 1826, FRCS 1844
Roberts, J., MRCS 1834, MD Erlang. 1853
Roberts, R., LSA 1858
Roberts, T. E., MRCS 1864, MD Edin. 1864
Roberts, W., MRCS 1870, LSA 1872
Robinson, C., MRCS 1812, FRCS 1857, FRCP Edin. 1865
Robinson, C. R., MRCS 1846
Robinson, G., MRCS 1861, LM 1862
Robinson, H., MRCS 1861, LSA 1862
Robinson, R., MRCS 1866
Robinson R., MRCS, LSA 1870
Robinson, S. H., MRCS 1862
Rogers, B., MRCS 1857, MD St. And. 1862
Rogers, G. O., MRCS, LSA 1826

Rogers, H. C., MRCS, LSA 1865
Rogers, H., MRCS 1848, LDS 1860
Rogers, H. J., MRCS 1852, LRCP Ed. 1862
Rogers, T. A., MRCS 1847, LDS 1860
Rogers, T. L., MRCS 1853, MD St. And. 1857
Rogerson, G., MRCS, LSA 1827
Rogerson, J., LSA 1827
Rolleston, G., FRS, MD Oxon. 1857, FRCP 1859
Roper, C. H., MRCS, LSA 1850
Roper, G. S., MRCS, LSA 1836
Roscow, P., MRCS, LSA 1845
Roskrudge, T. H. A., LSA 1838, MRCS 1839
Rouch, J. R., MRCS, LRCP, LSA 1868, FRCS 1870
Rouse, E., MRCS 1833, LSA 1836
Rowley, E. B., LSA 1825, MRCS 1826
Rowley, J., LSA 1834, MRCS 1837
Rowörth, A. H., MRCS, LSA 1867
Royds, W. A. S., MRCS 1866, LRCP 1867, LSA 1868
Ruddock, E. H., MRCS 1863, MRCP Edin. 1865
Rudge, H., MD Erlang. 1814
Rummin, G., LSA 1859
Rumsey, C., LSA 1831, MRCS 1832
Rundle, H., MRCS, LSA 1866, FRCS 1870
Rusher, J. G., LSA 1841, MRCS 1842
Russell, G. I., MRCS 1820, MD Aberd. FRCS 1854
Russell, G. I., jun., MRCS, LSA 1860
Russell, J., MRCS 1857
Rust, H. R. G., MRCS LSA 1865
Rye, A. B., LSA 1836, FRCS 1852
Rymer, J., MRCS 1815

Sadler, M. T., jun., MRCS 1855, MD Lond. 1861
Sadler, S. E., MRCS 1832, FRCS 1862
Salmon, A. L., LSA 1872
Salmon, F., MRCS 1818, LSA 1817
Samuel, R., MRCS 1868
Salter, J. R., MRCS, LSA 1852
Sandell, LSA 1830, MRCS 1831
Sanders, E., MRCS, LSA 1868
Sanderson, H. J., MRCS 1842, MD St. And. 1853
Sandiland, A. H., MRCS, LRCP 1869
Sandwith, H., MD St. And. 1834, FRCP 1859
Sandwith, H., MD St. And. 1850
Sankey, J. O., MRCS 1867, LSA 1872
Sankey, W., MRCS 1844
Sankey, W H. O., MD Lond. 1850, FRCP
Sargent, D. W., LSA 1836, MRCS 1837
Saul, W. W., MRCS, LSA 1867, MD Heidelb. 1870
Saunders, E. D., MRCS 1828, LSA 1829
Saunders, G., CB, MRCS 1845, MD St. And. 1872
Saville, R., LSA 1836, MD Erlang. 1855
Savory, C. T., MRCS 1862, MD St. And. 1862
Savory, J. E., MRCS, LSA 1854
Savory, J. T., LSA 1823, MRCS 1824
Savory, W. S., FRS, MRCS 1847, FRCS 1852
Sawer, T., MRCS 1837
Sawkins, J., MRCS 1835
Sayer, C. W., LSA 1871 MRCS 1872
Scholfield, H. D., MRCS 1842, MD Oxon 1847
Schollick, T. J., MRCS, LSA 1860
Scobell, Rev. G., MRCS 1853
Scobell, T. E., MRCS 1867
Scott, J., LSA 1833, FRCS 1854
Scott, R. J., MRCS, LSA 1844
Searle, G. C., LSA 1831
Sedgwick, H., MRCS 1866, LRCP 1868
Selwood, H. C., MRCS 1861, MD St. And. 1862
Selwood, J. H., LSA 1829, FRCS 1864
Senior, C., MRCS, LSA 1858
Sequeira, H. L., LSA 1852, MRCS 1859
Sewell, J. J., MRCS 1828, LSA 1847
Shackleford, G., LSA 1827
Sharp, D., MB Edin. 1866
Sharpe, H. J., MRCS 1862
Sharpie, H. W., LSA 1850, FRCS 1862
Sharples, W., LSA 1834, MRCS 1835
Shaw, C. E. M., MRCS 1863, LSA 1864
Shaw, G. H., MRCS, LSA 1864
Shaw, H. E. F., MRCS 1844, LSA 1845
Shaw, J., MRCS 1869
Sheehy, W. H., MRCS 1851, LRCP Edin. 1859
Shepard, W. L., MRCS, LSA 1865
Shephard, F., MRCS 1855, LRCP Edin. 1860
Sheppard, J. B., MRCS, LSA 1849
Sheppard, W., MRCS 1843, LSA 1844
Sherwin, W. C., MRCS 1859, LSA 1860
Shine, W. L., MRCS 1859
Shipton, J. N., MRCS 1855
Shurlock, M., LSA 1836, MRCS 1837
Sicard, A. B., MRCS, LSA 1831
Simon, A. C., LSA 1870, MRCS 1871
Simons, T. R., MRCS, LSA 1833
Simons, J. A., MRCS 1847, MD St. And. 1862
Simpson, C. M., MRCS 1862
Simpson, J. H., MRCS, LSA 1866
Simpson, R. P., MRCS, LSA 1865
Simpson, S. H., MRCS, LSA 1864
Simpson, W., MRCS 1863
Simpson, W. I., LSA 1823, MRCS 1824
Sison, E. N., MRCS 1842, LSA 1844
Skaife, F, LSA 1871, MRCS 1872
Skeate, E., MRCS, LSA 1834
Skeel, D., LSA 1827, MRCS 1829
Skeel, T., LSA 1837, MRCS 1838
Skelton, J., sen., MD Mass. 1855, LRCP Edin. 1864
Skey, F. C., CB, FRS, MRCS 1822, FRCS 1843
Skrimshire, C. P., MRCS, LSA 1869
Slaytor, J. C., LSA 1836
Sleeman, P. R., MRCS 1839, FRCS 1854
Sloman, S. G., LSA 1837, MRCS 1839
Sloman, S. G., LRCP, MRCS 1869
Slyman, M. D., MRCS 1855, LSA 1858
Smart, D., LRCP Lond., MRCS 1869
Smart, T. W. W., MRCS 1827, MRCP 1860
Smee, A., MRCS 1840, FRS, FRCS 1855
Smee, A. H., MRCS 1866
Smith, H. A., MRCS, LSA 1870
Smith, C. E., MRCS 1858, MD St. And. 1859
Smith, E. R., MRCS 1864, LSA 1865
Smith, E., MRCS 1834, LSA 1835
Smith, F. M., MRCS 1851, MD St. And. 1857

Smith, H., MRCS 1864
Smith, H. Spencer, MRCS 1837, FRCS 1843
Smith, J., LSA 1847, MRCS 1849
Smith, J. B., FRCS Edin. 1846, MRCS 1846
Smith, J. R., LSA 1824, MRCS 1859
Smith, J., LSA 1833, MD St. And. 1853
Smith, P., MD Aber. 1844, MRCP Lond. 1846
Smith, R. W., MRCS 1860, LRCP 1863
Smith, R., LSA 1828, MRCS 1829
Smith, T., MRCS 1854, FRCS 1858
Smith, T., MRCS, LSA 1868
Smith, W. A., MRCS, LSA 1856
Smith, W., MRCS, LSA 1834
Smith, W. J., MRCS, LSA 1857
Smith, W. A., MRCS 1856, MD St. And. 1857
Smith, W. R., LSA 1872
Soame, C. B. H., MRCS, LSA 1854
Solly, S., MRCS 1828, FRCS 1843, FRS
Solomon, J. V., LSA 1838, FRCS 1854
Soper, J. H., MRCS 1855
Southey, R., MD Oxon. 1866, FRCP 1866
Southam, F., LSA 1841, MRCS 1842
Southam, G. T. M., MB Lond. 1863, MRCS 1862
Southam, T., LSA 1830, MRCS 1831
Southcomb, W. T., LSA 1824, MRCS 1825
Spackman, F. C., MRCS, LSA 1849
Spencer, E., in practice prior to 1815
Spencer, J. H., LSA 1835, MRCS 1836
Spicer, N. W., jun., MRCS 1853, LSA 1854
Spooner, E. O., LSA 1829, FRCS 1852
Spouncer, F. C., MRCS 1859, LSA 1860
Spurway, C., MRCS 1863
Square, W., MRCS, LSA 1866, FRCS 1871
Square, W. J., MRCS, LSA 1835
Squire, A., LSA 1833, MRCS 1839
Stables, W. W. G., MRCS, LRCP Edin. 1869
Stacpoole, G. C., MD Edin. 1845
Stafford, S. J. F., LSA 1858, MRCS 1851
Stallard, J. H., LSA 1842, MB Lond. 1858
Staning, R., MRCS 1837
Stanwell, W., MRCS, LSA 1855
Stanton, J., LSA 1832, MRCP 1859, MD Heidelb. 1842
Starke, A. G. H., MRCS 1859, MD St. And. 1861
Startin, J., LSA 1827, FRCS 1852
Starling, R. T., LSA 1824, FRCS 1856
Steel, C. D., MRCS 1836, FRCS 1859
Steel, J. S., MRCS 1843, MD Aberdeen 1854, FRCP Edin. 1855
Steele, H. C. B., MRCS, LSA 1831
Steele, S. T., MRCS, LSA 1872
Stephenson, T. A., MRCS, LSA 1855
Stephenson, W., MRCS 1861, LSA 1862
Stevens, D. F., MRCS 1855, LSA 1856
Stevens, N. H., MRCS 1850
Stevenson, J. F., MD Edin. 1846, MRCS 1847
Stevenson, N., MRCS 1857, LDS 1862
Stewart, C., MRCS 1862
Stilwell, G., LSA 1827, MRCS 1828
Stilwell, H., MRCS 1857, MD Edin. 1857
Stocker, G. S., MRCS 1831, LSA 1837
Stokoe, LSA 1828, MD St. And. 1862
Stone, D., LSA 1841, MRCS 1842
Stone, R. N., MRCS, LSA 1836, LRCP Edin. 1859
Stone, R. S., MRCS, LM, LSA 1863, LRCP 1864
Stonehouse, C., LSA 1854, MRCS 1860
Stones, W. H., MRCS, LSA 1840
Stoney, P. B., MRCS 1870, LM and LRCP Edin. 1871, LSA 1872
Storrs, R., MRCS 1856, LSA 1857
Stott, T. S., MRCS 1863, LSA 1864
Stowell, T., MRCS 1863, MD New York 1864
Stowers, N., MRCS 1838, LSA 1839
Strafford, T. MRCS, LRCP 1871
Stretton, S., MRCS 1854, LSA 1856
Stretton, W. H., MRCS 1851, LSA 1853, MD St. And. 1872
Strickland, E., MRCS, LSA 1860
Strutt, G. H., LSA 1860, MRCS 1861
Stubbs, H., LSA 1831, FRCS 1843
Sturkey, H. G., MRCS 1853, LRCP Edin. 1859
Stutter, F. A., MRCS 1853, MD St. And. 1860
Sugden, W., MRCS, LSA 1839
Summers, R. H., MRCS 1822
Sumner, W. A., MRCS, LSA 1842
Sutton, C. F., MRCS, LSA 1820
Sutton, H. G., MRCS, LSA 1860
Swales, E., LSA 1858, MRCS 1860
Swales, P., MRCS 1861, LSA 1862
Swan, W., MRCS 1866, MB Oxon. 1868
Swayne, S. H., MRCS 1843, LSA 1844
Swift, G., LSA 1824, LRCP Edin. 1863
Sylvester, G. M., MRCS, LSA 1839
Sylvester, K. W., MRCS, LSA 1872
Symons, H. E., MRCS 1869, LRCP. 1870
Sympson, T., MRCS 1847, FRCS 1872

Taaffe, R. P B., MRCS 1852, MD Lond. 1865
Tait, E. W., LSA 1851, MRCS 1852
Tanner, R. C..MRCS 1861
Taplin, B. D., MRCS 1854, LRCP Edin. 1860
Taplin, T., MRCS, LSA 1824
Tarleton, J. H., MRCS 1865, LSA 1866
Tate, R., in practice prior to 1815
Taunton, G., MRCS 1848, LSA 1852
Taunton, T., MRCS, LSA 1835
Tayler, C., LSA 1837, MRCS 1838
Tayler, G. C., MRCS 1866, MB Lond. 1866, MD 1871
Taylor, H., MRCS, LSA 1863
Taylor, J. E., MRCS 1845, LSA 1846
Taylor, J. S., LSA 1844, MD Aber. 1853
Taylor, T., MRCS 1842, LSA 1843
Taylor, T., MRCS 1818
Taylor, T., LSA 1821, FRCS 1861
Taylor, T., MRCS 1837
Taylor, W., MRCS, LSA 1830
Tattersall, W. J., MRCS, LSA 1866
Taynton, H., MRCS 1836, LSA 1839
Teare, T. M., jun., MD St. And., MRCS 1862
Tench, E. B., MRCS, LSA 1857
Terry, C., MRCS, LSA 1856
Terry, G., MRCS, LSA 1852
Terry, J., LSA 1825, MRCS 1826
Terry, J. J., LSA 1827
Theed, F., MRCS 1836, FRCS 1852

Thibou, J. W., MRCS 1864
Thomas, D. H., MRCS 1863, LSA 1865
Thomas, D. P., MRCS 1848, LSA 1851
Thomas, E., MRCS 1864
Thomas, J., MRCS 1836, LSA 1837
Thomas, J. B., MRCS 1864
Thomas, J., MRCS, LSA 1857
Thomas, J. H., MRCS 1850, MD Aberdeen 1860
Thomas, R., MRCS, LSA 1853
Thomas, R. H., MRCS, LSA 1853
Thomason, W. J., MRCS 1861, LSA 1860
Thompson, C. M., MRCS, LSA 1817
Thompson, C. R., MRCS 1850, LSA 1851
Thompson, C. T., MD St. And. 1855
Thompson, H., MRCS 1859, LSA 1860
Thompson. H.. MRCS. LSA 1871
Thompson, J. N., LSA 1824, MRCS 1825
Thompson, W. W., MRCS 1856, LSA 1857
Thomson, C. E., LSA 1828, FRCS 1863
Thorne, T. H., MRCS 1861
Thorne, R. T., MRCS 1863, MRCP 1867 MB Lond. 1866
Thorne, F. L., MRCS, LSA 1869
Thorne, W. B., MRCS 1869, LRCP 1870
Thornley, R. S., MRCS 1845, LSA 1846
Thurland, F. E., MRCS 1871, LSA 1872
Thursfield, W., LSA 1824
Thurston, G. J., MRCS 1848, LRCP Edin. 1860
Tibbits, H., MRCS 1865, LRCP 1865
Tibbits, J., MRCS 1853, MD St. And. 1853
Tidboald, J. A., LSA 1827, MRCS 1828
Timmins, J. A. J., MRCS 1867, LSA 1868
Tindale, A. McI., MRCS, LSA 1865
Tinsley, W. W., MRCS, LSA 1850
Tobin, G., MRCS 1867, LSA 1869
Tomlinson, R. S LSA 1827, MRCS 1828
Tompson, C. A. J., MRCS 1849, LSA 1858
Toogood, T. B., MRCS, LSA 1833
Tosswill, L. H., MB Cantab. 1869, MRCS 1870
Tothill, F. D., LSA 1833, FRCS 1864
Tracey, S. J., MRCS 1849, LRCP Edin. 1860
Tremearne, J., MRCS 1867
Trevan, F., LSA 1826, MRCS 1827
Trevan, M., LSA 1819
Trevan, M., MRCS 1863, LRCP 1861
Trollope, T., MB Cantab. 1854, MD 1868, MRCS 1856, MRCP 1869
Troughton, N., MRCS 1818, LSA 1819
Tuck, Rev. T. R., MRCS 1836
Tucker, R. P., MRCS 1834
Tuckwell, H. M., MRCP 1862, MD Oxon. 1863
Tuckwell, W. J. S., MRCS, LSA 1833
Tuke, D. H., MRCS 1852, MRCP 1860
Turner, C., MRCS 1853, LRCP Edin. 1860
Turner, C. C., MRCS, LSA 1841
Turner, E. W., MRCS, LSA 1856
Turner, J. W., LSA 1841, FRCS 1846
Turner, J., MRCS 1820, FRCS 1855
Turner, R., MRCS 1833, MD St. And. 1860
Turner, T., MRCS 1858, LRCP Edin. 1860
Turner, Professor W., MB Lond. 1857, MRCS 1853, FRCS Edin. 1861
Turner, F. H., MRCS 1869, LSA 1870
Turney, T. H., MRCS 1856, LSA 1857,
Tuxford, J. E., sen., LSA 1824, LRCP Edin. 1859
Twigge, N. B., MRCS, LSA 1831
Twining, E., MRCS 1840, LSA 1841
Tyack, J., MRCS 1856
Tylecote, E., LSA 1826
Tylecote, E. T., MRCS 1855, MD Aber. 1860
Tyrer, R., MRCS 1843
Tyte, R. H., MRCS 1853

Upton, H. C., MRCS, LSA 1866
Upton, T. S., MRCS, LSA 1840

Vallack, A., MRCS, LSA 1836
Vallance, E., MRCS, LSA 1863
Valpy, W. H., LFPS Glas. 1853, LM Glas.
Van, A. F., MRCS, LSA 1859
Vardy, J., MRCS 1842
Vaudin, C., MRCS 1853, LRCP Edin. 1860
Vaughan, W. E. W., MRCS, LSA 1853
Venn, T., MRCS, LSA 1848
Verey, G., MRCS 1859
Verity, A. B., MRCS 1840
Vernon, B. J., MRCS 1862, FRCS 1864
Vicary, C., MRCS, LSA 1845
Vicary, G. T., MRCS, LSA 1841
Vickers, T., LSA 1831, MRCS 1833
Vise, A. B., MRCS, LSA 1854
Vise, E., MRCS 1841, LSA 1842
Vise, E. B., in practice prior to 1815

Wadams, E., MRCS 1843, LSA 1845
Wade, C., MRCS 1866, LSA 1868
Wade, R., LSA 1871, MRCS 1872
Waghorn, F., MRCS 1862, MD St. And. 1862
Wall, A. LSA 1878
Wall, A., LSA 1871, MRCS 1872
Walker, B., MRCS, LSA 1861
Walker, C., LSA 1846, MRCS 1848
Walker, C. E., MRCS 1866
Walker, G., MRCS, LSA 1825
Walker, G. A., LSA 1829, MRCS 1831
Walker, J. W., MRCS 1850, MB Lond. 1850
Walker, T., LSA 1834
Walker, W. H., MRCS 1860, LSA 1861
Wallace, A., MRCP 1857, MD Oxon. 1861
Wallis, G., MRCS 1857, LSA 1858
Walsham, W. J., LSA 1870, MB & CM Aberd. 1871
Walter, J., MRCS, LSA 1831
Walter, O. C., MRCS, LSA 1831
Walton, H., FRCS 1848
Walton, J. S., MRCS 1835
Wane, W. J., MRCS 1865
Ward, J., MRCS, LSA 1835
Ward, S. M., MRCS 1860, MB Cantab. 1860
Ward, W. S., MRCS 1832
Ward, W. A., LSA 1871, MRCS 1872
Ware, J., MRCS 1817
Ware, J. T., MRCS 1840, FRCS 1845
Ware, R., MRCS, LSA 1826
Waring, T. W., LSA 1833
Warner, J., MD St. And. 1862, MRCS 1860
Warner, T., LSA 1823, MRCS 1824
Warren, F. H., MRCS, LSA 1837
Warren, T. A., LSA 1838, LSA 1843

Varren, T., MRCS 1868, LSA 1869
Varry, E. T., LSA 1824, MD St. And. 1856
Varwick, J., FRCS 1859
Varwick, R. A., MRCS 1854, MD St. And. 1858
Vaterland, H. J., MRCS 1847
Vatkins, D. D., MRCS, LSA 1855
Vatling, T. F., MRCS 1813
Vatson, F. H., MRCS 1866
Vatson, J., LSA 1824, MRCS 1825
Vatson, R. M., MRCS, LSA 1827
Vatson, Sir T., Bart., MD Cantab. 1825, FRCP 1826
Watts, G., LSA 1852
Watts, G. H., MRCS 1850, LM Dub. 1852
Waugh, A., MRCS 1853, LRCP 1864
Waugh, J. W., MRCS 1840, MD St. And. 1856
Waylen, A. R., MRCS 1856. MD St. And. 1858
Waylen, C. W., MRCS, LSA 1861
Waylen, E., MRCS 1848
Waylen, F. H., MRCS 1867
Waylen, G., LSA 1838, MRCS 1839
Waylen, W., LSA 1824, FRCS 1844
Wayman, C. P. S, MRCS, LSA 1870
Wearing, A., MRCS, LSA 1864
Weatherhead, J. F., MRCS 1872
Weatherly, F., MRCS, LSA 1841
Webb, G. F., MRCS, LSA 1865
Webb, H. S., LSA 1850, MRCS 1851
Webb, J. S., MRCS 1835, LSA 1836
Webb, J., MRCS 1839, FRCS 1856
Webb, R., MRCS, LSA 1854
Webb, T. F., MRCS 1835, LSA 1836
Webber, W., LSA 1821, FRCS 1859
Webster, G. E., MRCS, LSA 1851
Webster, W. H. B., LSA 1816
Weekes, G., LSA 1838, FRCS 1854
Weekes, J., MRCS 1849
Weekes, W. H. C., MRCS 1860, LSA 1862
Wells, J. H., MRCS, LSA 1834
Wesley, W. N., MRCS 1871
West, C., MD Berlin 1837, FRCP 1848
West, W. C., MRCS 1833, MRCP Edin. 1864, FRCS 1852
Wharry, C. J., MRCS, LSA 1871
Whateley, T., MRCS, LSA 1837
Wheeler, T. R., LSA 1842, MRCS 1843
Whidborne, G. F., LSA 1834, MD Heid. 1848
Whipple, C., MRCS 1863, LRCP 1864
Whitaker, E. F., MRCS, LSA 1824
Whitby, C. W., MRCS 1848, MB Aber. 1858
White, J. L., LSA 1836, FRCS 1845
White, R., MRCS, LSA 1816
Whitfield, R. F., LSA 1822
Whitling, H. T., MRCS 1854, LSA 1855
Whitney, W. U., MRCS, LSA 1835
Wicksteed, F. W., MRCS, LSA 1863
Wilcox, W., MRCS 1863
Wilding, R., LSA 1838, MRCS 1839
Wilkins, E. P., MRCS 1847, LRCP Edin. 1859
Wilkins, H., MRCS 1835, LSA 1836
Wilks, G. F., LSA 1832, MRCS 1833
Willan, T. H., MRCS 1865, LSA 1866
Willcocks J., MRCS 1871
Willett, A., MRCS 1859, FRCS 1862
Willett, C. V., MRCS, LSA 1861
Willey, T., MRCS 1844
William, J., LSA 1860, MD St And. 1861
Williams, A.W., MRCS 1843, MD St. And. 1847
Williams, C., MRCS 1857
Williams, E., MRCS 1834, MD St. And. 1850
Williams, E., MRCS 1804
Williams, E. H., MRCS, LSA 1861
Williams, E. E., MRCS, LSA 1860
Williams, H., MRCS 1815
Williams, H. L., MRCS, LSA 1867
Williams, T. M., MRCS 1853, LSA 1864
Williams, J., MRCS 1822, LSA 1823
Williams, J., MRCS 1841, FRCS 1859
Williams, J., in practice prior to 1815
Williams, J., MD St. And., MRCS 1860
Williams, J.M., MRCS 1853, LM 1854, LSA 1854
Williams, J. T., MRCS, LSA 1867
Williams, N., in practice prior to 1815
Williams, O. W., MRCS 1820, MD Edin. 1840
Williams, P., MRCS, LSA 1856
Williams, R. P., LSA 1858
Williams, S. W. D., MRCS 1861, MD St. And. 1862
Williams, T. E., MRCS, LSA 1863
Williams, W., MRCS 1840, MD St. And. 1842
Williams, W., LSA 1826
Williams, W., MRCS 1825, FRCS 1859
Williams, W., MRCS 1842
Williamson, J. G., MRCS 1869, LRCP 1870
Willis, F., MB 1861, MD Oxon. 1864
Willis, G., LSA 1871
Wills, C. J., MRCS 1864, LSA 1865
Wills, J. S., MRCS, LSA 1850
Wilson, E., FRS, MRCS 1831, FRCS 1843
Wilson, F., MRCS 1858, MD Heid. 1858
Wilson, H. G., MRCS 1866
Wilson, J. A., MRCS 1859
Wilson, W. J., MRCS 1855, LRCP 1859
Wilton, F., MRCS 1855, LM 1856
Wilton, J. P., MRCS 1852, LSA 1854
Wing, C., MRCS 1814
Wingate, R., MRCS 1858, LSA 1860
Winkfield, A., FRCS 1869, MRCS 1859, LSA 1860
Winkfield, W. B., MRCS 1858, LRCP 1864
Winstone, B., MRCS 1841, MD Aber. 1847
Winterbotham, L., MRCS, LSA 1856
Wingar, J., LSA 1826, MRCS 1827
Wise, R. S., MRCS 1840, MD St. And. 1842
Wiseman, W. W., MRCS, LSA 1833
Withers, F. O. B., MRCS 1859, LSA 1860
Witt, C., MRCS 1821, MRCP 1861
Witt, C., MRCS 1841
Witten, E. W., MRCS, LSA 1856
Wolferstan, S., LRCP 1864, MRCS 1864
Wolstenholme, J. H., MRCS 1851, LSA 1852
Wood, A. J., MRCS 1830, MD St. And. 1858
Wood, F., MRCS 1841, FRCS 1860
Wood, G. L., LSA 1818, MRCS 1819
Wood, J. W., MRCS 1869
Wood, J. Y., MRCS 1836, LSA 1837
Wood, T., MRCS, LSA 1827
Wood, T. O., MRCS 1868
Wood, T. C., MRCS 1840, MD Aber. 1846

Wood, W., MRCS, LSA 1857
Wood, W. J., MRCS 1858, LSA 1859
Woodhouse, J., LSA 1829, MRCS 1831, MD, Aber. 1858
Woods, F. B., LSA 1830, MRCS 1856
Woods, F. H., MRCS 1859, LRCP Edin. 1860
Woods, G. A., MRCS, LSA, LRCP Edin. LM 1868
Woodward, J. R., MRCS 1824
Wookey, J., MRCS 1858, LSA 1861
Woolhouse, H. H., MRCS 1849
Woollett, R. F., LSA 1838, MRCS 1839
Woolley, T. S., MRCS, LSA 1863
Worboys, F. T. S., MRCS, LSA 1862
Worger, T. H., MRCS, LSA 1864
World, R. R., LSA 1837, LRCP Edin. 1860
Wormald, T., MRCS 1824, FRCS 1843
Worship, J. L., MRCS, LSA 1847
Wotton, C., MRCS 1858, MD St. And. 1859
Wray, D. C., MRCS 1856, MD St. And, 1862
Wright, J., MRCS, LSA 1853
Wright, M., MRCS 1863, LSA 1865
Wright, T. G., LSA 1827, MRCS 1829
Wright, W. K., LSA 1832, FRCS 1852
Wrixon, J., MRCS 1842, LSA 1854
Wyer, O. F., MRCS 1858, LSA 1859, M. Glasg. 1867
Wyman, G., LSA 1831, MRCS 1832
Wyman, J. S., LSA 1867, MB Lond. 1868
Wynne, J., MRCS, LSA 1834
Wynter, J. St. T., LSA 1830, MRCS 1858

Yarde, W., MRCS 1857, LSA 1858
Yarrow, G. E., MRCS, LSA 1863, LRCP [illegible]
Yates, J., MRCS, LSA 1846
Yates, W. H., MRCS 1851, LSA 1852
Yearsley, J., MRCS 1827, MD St. And. 1862
Yonge, J., MD Oxon. 1821
Young, A., MRCS 1870, LRCP 1872
Young, R., MRCS 1818, MD Aberdeen 1851

Gentlemen who desire their names to be added to this Register are requested to apply to the Honorary Secretary, who will be glad of any assistance in making it complete and correct.

EXAMINATIONS, 1872.

Senior Scholarship in Medicine, Surgery, and Midwifery—

H. J. Ilott } Æq.
E. Milner }

Senior Scholarship in Anatomy, Physiology, and Botany—

1. J. C. Verco
2. A. F. Stevens

Kirkes Medal—

R. M. Boodle

Wix Prize—

Vincent D. Harris

Hon. Mention—E. J. Burgess

Hichens Prize—

C. S. W. Cobbold

PRACTICAL ANATOMY

Foster Prize—J. C. Verco
2. G. Andrew, A. F. Stevens
4. J. Macready
5. J. Mills
6. C. S. W. Cobbold
7. J. W. Groves
8. R. T. Thomas
9. D. W. D. Comins
10. J. J. W. Weakley
11. H. Bott
12. T. W. Reid
13. R. Wharry

Treasurer's Prize—J. Ranking
Examiner's Prize—H. G. Cumming
3. G. H. Hames
4. W. Kebbell
5. F. H. Spooner
6. F. H. Carter, A. Boswell
8. W. H. Briggs
9. C. C. Turnour
10. C. A. Daubeny
11. A. Pearce

ST. BARTHOLOMEW'S MEDICAL COLLEGE

THE MEDICAL AND SURGICAL STAFF.

Consulting Physicians—Dr. Burrows, D.C.L., F.R.S., Dr. Farre.
Consulting Surgeons—Mr. Wormald, Sir J. Paget, Bart., D.C.L., F.R.S.
Physicians—Dr. Black, Dr. Harris, Dr. Andrew, Dr. Southey.
Surgeons—Mr. Holmes Coote, Mr. Holden, Mr. Savory, F.R.S., Mr. Callender, F.R.S.
Assistant-Physicians—Dr. Church, Dr. Gee, Dr. Duckworth, Dr. Hensley.
Assistant-Surgeons—Mr. Thomas Smith, Mr. Willett, Mr. Langton, Mr. Morrant Baker.
Physician-Accoucheur—Dr. Greenhalgh.
Ophthalmic Surgeons—Mr. Power, Mr. Vernon.
Dental Surgeon—Mr. Coleman.
Casualty Physicians—Dr. Hollis, Dr. Wickham Legg, Dr. Lauder Brunton.

LECTURES.

Winter Session 1872-73.

Medicine—Dr. Black, Dr. Andrew.
Clinical Medicine—Dr. Black, Dr. Harris, Dr. Andrew, Dr. Southey.
Surgery—Mr. Savory, F.R.S.
Clinical Surgery—Sir J. Paget, Bart., D.C.L., F.R.S., Mr. Coote, Mr. Holden, Mr. Savory, F.R.S., Mr. Callender, F.R.S.
Descriptive and Surgical Anatomy—Mr. Callender, F.R.S., Mr. Thomas Smith.
General Anatomy and Physiology—Mr. Morrant Baker.
Chemistry and Practical Chemistry—Dr. Russell, F.R.S.
Materia Medica—Dr. Farre, Dr. Lauder Brunton.
Forensic Medicine and Hygiene—Dr. Southey.

Midwifery and Diseases of Women and Children—Dr. Greenhalgh.
Botany—Rev. George Henslow.
Pathological Anatomy—Dr. Gee.
Comparative Anatomy—Dr. Church.
Ophthalmic Medicine and Surgery—Mr. Power.
Dental Anatomy and Surgery—Mr. Coleman.
Mental Diseases—Dr. Claye Shaw.

DEMONSTRATIONS.

Diseases of the Skin—Dr. Duckworth.
Diseases of the Ear—Mr. Thomas Smith.
Orthopædic Surgery—Mr. Willett.
Diseases of the Eye—Mr. Vernon.
Morbid Anatomy—Dr. Gee.
Practical Surgery—Mr. Willett.
Practical Anatomy and Operative Surgery—Mr. Langton, Mr. Marsh.
Assistant-Demonstrators—Mr. Cumberbatch, Mr. Doran, Mr. Furner.
Mechanical and Natural Philosophy—Dr. Hensley.
Practical Physiology—Mr. Symons.

Medical Registrar—Dr. Hollis.
Surgical Registrars—Mr. Bloxam, Mr. Symons.

COLLEGIATE ESTABLISHMENT.

Warden—Mr. Morrant Baker.

Students can reside within the Hospital walls, subject to the College regulations.

Three Scholarships of £50 each, and four others varying in value from £20 to £30, are awarded annually.

Further information respecting Scholarships, Pupils' Appointments, and other details, may be obtained from Mr. Callender, Mr. T. Smith, or Mr. Morrant Baker, and at the Museum or Library.

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AND PARLIAMENT STREET

STATISTICAL TABLES

OF THE

PATIENTS UNDER TREATMENT

Errata in the Statistical Tables

Page 11, for *Uterinev*, *Anteversion*, and *Retrversion*, read *Uterine*, *Anteversion*, and *Retroversion*

„ 14, line 6 from bottom, erase the female death in the 16th column, and insert one in the 14th

„ 17, under Hæmoptysis, insert one male death in the 7th and in the 19th columns

„ 24, Deaths of the Males, last line, for 43 read 35

THE MEDICAL REGISTRAR,

W. AINSLIE HOLLIS, M.D.

AND

THE SURGICAL REGISTRARS,

J. ASTLEY BLOXAM, F.R.C.S.

AND

H. SYMONS, M.R.C.S.

PREFACE.

THE general form and arrangement of the Tables are, with few exceptions, the same as those of the two preceding years.

An alteration in the classification of the Occupations of the Patients has this year necessitated the separation of the usual Table into two parts, one for the Medical, the other for the Surgical Report.

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ST. BARTHOLOMEW'S HOSPITAL.

1871.

Number of Beds in Medical Wards (Including 14 for Diseases of Women)	230
„ „ „ Surgical „ {Including 7 for Diseases of Women and 26 for Ophthalmic cases}	428
„ „ „ Unassigned	18
	676

GENERAL STATEMENT OF THE PATIENTS UNDER TREATMENT DURING THE YEAR.

Patients remaining January 1st, 1871:			
Medical	189	... 504	
Surgical	315		
Admitted during the year:			... 6183
Medical	2177	... 5679	
Surgical	3502		
Discharged Cured or Relieved:			
Medical	1688	... 4889	
Surgical	3201		
Discharged Unrelieved:			
Medical	143	... 242	
Surgical	99		
			... 6183
Died:			
Medical	367	... 556	
Surgical	189		
Remaining January 1st, 1872:			
Medical	168	... 496	
Surgical	328		

Patients brought in dead	21
Number of Post-mortem Examinations	315

MEDICAL REPORT.

TABLE I,

Showing the total Number of Cases of each Disease under Treatment during the Year 1871, *with the Results.*

DISEASES.	No. of medical cases in the hospital at beginning of 1871.		No. of medical cases admitted during 1871.		Discharged cured and relieved.		Discharged unrelieved.		Died.		Remaining at the end of year 1871.		Nature of complications, &c.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
GENERAL DISEASES, A.													
Smallpox	...	1	12	4	1	2	11	3	...	...	...	...	Confluent in a man and a woman both of whom recovered.
Chicken pox	1	...	...	1	1	1	...	...	...	...	...	...	
Measles	...	...	1	1	1	1	...	...	...	...	...	...	
Scarlet Fever	3	3	3	7	6	8	...	...	...	1	...	1	A man with irreducible hernia. One hospital nurse recovered.
Do., *Sequelæ of*	4	1	11	6	13	5	...	...	2	2	...	...	Fatal cases: a man with pleuritic effusion on right side, a girl with uræmic convulsions. One man contracted smallpox in the hospital and recovered.
Typhus	...	1	5	6	4	7	...	...	1	...	...	...	Fatal case died within 24 hours of admission.
Enteric Fever	3	1	37	31	32	19	...	1	5	5	3	7	One fatal male case with perforation of ileum. A man recovered with heart disease, a woman with phlegmasia dolens.
Do., *Sequelæ of*	1	...	...	...	...	...	...	...	1	...	...	...	Sloughing of small intestines.
Simple Continued Fever	...	1	...	2	...	2	...	1	...	...	...	...	
Febricula	1	3	12	23	12	24	...	...	...	...	1	2	Five hospital nurses.
Ague	...	...	9	1	9	1	...	...	...	...	...	...	A man with hæmaturia. The woman with enlarged spleen.
Choleraic Diarrhœa	...	...	2	...	2	...	...	...	...	...	...	...	
Diphtheria	...	1	1	1	1	2	...	...	...	...	...	...	Diphtheritic tonsillitis in a female.
Do., Sequelæ of	...	...	2	...	2	...	...	...	...	...	...	...	Paralysis of soft palate in both cases.
Hooping-cough	...	...	3	2	2	1	...	...	1	...	...	1	
Mumps	...	...	...	2	...	2	...	...	...	...	...	...	
Facial Erysipelas	4	1	20	18	16	16	...	...	6	2	2	1	A man also with acute eczema recovered. A hospital nurse recovered.
Puerperal Fever	...	...	...	2	...	1	...	...	...	1	...	...	
GENERAL DISEASES, B.													
Acute Rheumatism	6	5	44	30	45	31	...	1	...	...	5	3	Males: thirty-two first attack, fourteen second do., three third do., one several. Females: nineteen first attack, ten second do., two third do., one fourth do., one seventh do. One hospital nurse.

DISEASES.	No. of medical cases in the hospital at beginning of 1871.		No. of medical cases admitted during 1871.		Discharged cured and relieved.		Discharged unrelieved.		Died.		Remaining at the end of year 1871.		Nature of complications, &c
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
GENERAL DISEASES, B (*continued*).													
Acute Rheumatism—													
With Endocarditis	3	9	20	42	21	49	...	...	...	...	2	2	Males: ten first attack, five seco do., four third do., one fou one fifth attack. Females: two six first attack, fourteen se do., eight third do., one six one seventh, and one eighth
Do., *with Pericarditis*	...	3	16	14	15	12	...	...	...	3	1	2	Complicated in a fatal case with rea, in another with pleurisy. males with endocarditis also: w with pneumonia. Two fem with endocarditis, and four w lung complications recovered.
Do., *with Lung Complications*	3	...	1	...	3	...	...	...	...	...	1	...	Two with double pleurisy.
Sub-acute Rheumatism .	2	8	44	37	41	36	...	1	...	...	5	8	Males: two with heart complica one with pleurisy. Females: with heart disease. A wom contracted smallpox in the ho pital. Two hospital nurses.
Gonorrhœal do.	...	...	7	...	4	...	2	...	...	...	1	...	One case with aortic regurgitat
Synovial do.	...	...	6	2	5	2	...	...	...	...	1	...	A hospital nurse.
Muscular do.	...	...	5	1	4	1	...	...	...	...	1	...	The woman after childbirth.
Lumbago	...	...	5	...	5	...	...	...	...	...	...	...	
Chronic Rheumatism ...	1	...	8	6	7	6	...	...	...	...	2	...	A man with acute pleurisy; woman with heart affection.
Acute Gout	1	...	7	...	8	...	...	...	...	...	...	...	
Chronic Gout	...	...	3	...	2	...	...	...	...	...	1	...	
Gouty Synovitis	2	...	6	4	8	4	...	...	...	...	...	...	A female with severe ophthalmi
Chronic Osteo-Arthritis.	...	...	1	4	1	3	...	...	...	1	...	...	Fatal case with heart disease a caries of the vertebræ.
Cancer	...	2	14	27	3	13	1	2	9	12	1	2	Fatal cases.—Males: one cancer fistula between trachea and œs phagus; one cancer of lungs a liver; one of anterior mediastinu one of posterior mediastinum; o scirrhus of the stomach; one fi tula between stomach and colo one of colon; one of *pancreas* Females: one of spinal cord w paraplegia; one of cervical glands one of right lung; one *of colon* one of rectum; two of liver; o of omentum (colloid); one o ovary; one of uterus; *one* o vagina; one of pelvis. Ten m males with carcinoma of uteru four with epithelioma *cervicis ute* one with cancer of mediastinum relieved.

DISEASES.	No. of medical cases in the hospital at beginning of 1871.		No. of medical cases admitted during 1871.		Discharged cured and relieved.		Discharged unrelieved.		Died.		Remaining at the end of year 1871.		Nature of complications, &c.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
GENERAL DISEASES, B (*continued*).													
Lupus	1	...	...	...	1	...	...	...	...	...	...	...	
Scrofula	...	...	1	2	1	1	...	...	...	1	...	...	Fatal case with diarrhœa and some symptoms of pulmonary phthisis.
Tubercular Meningitis	1	...	6	1	3	...	1	...	3	1	...	...	
Tubercular Pericarditis	...	...	...	1	...	1	...	...	...	...	...	...	With also phthisis pulmonalis.
Phthisis Pulmonalis	3	3	82	51	37	27	13	1	32	20	3	6	Fatal cases.—Males: seven died with hæmoptysis; one with gangrene of lung; three with lardaceous disease. Two females with albuminuria. Ten males and seven females were admitted with hæmoptysis and recovered. One man was attacked with mania and one had heart disease.
Acute Miliary Tuberculosis	1	1	3	1	...	1	...	...	4	1	...	...	In a man after enteric fever—Paracentesis for empyema performed in a fatal case.
Tabes Mesenterica	...	...	1	...	...	...	...	...	1	...	...	...	Enteritis and pleurisy of the left side.
Tubercular Peritonitis	...	...	...	1	...	...	...	...	...	1	...	...	
Diabetes	2	1	6	2	2	2	2	...	3	1	1	...	Fatal cases.—Males: one pleurisy; one (?) phthisis pulmonalis. The female had also phthisis pulmonalis.
Purpura	...	...	2	1	2	1	...	...	...	...	...	...	
Anæmia	...	...	1	12	1	9	...	...	...	1	...	2	Somewhat fatty heart in fatal case.
Chlorosis	...	...	...	3	...	3	...	...	...	...	...	...	
General Dropsy	...	...	4	8	3	7	1	1	...	...	...	...	
LOCAL DISEASES.													
DISEASES OF THE NERVOUS SYSTEM.													
Encephalitis	...	...	2	...	...	...	...	...	2	...	...	...	Both with disease of petrous bone.
Meningitis	1	...	3	2	1	...	1	...	2	2	...	...	A fatal male case with otitis. A female with heart disease.
Inflammation of Brain	...	...	1	...	1	...	...	...	...	...	...	...	
Cerebral Softening	...	...	2	...	...	...	...	...	2	...	...	...	
Abscess of Brain	...	...	1	...	...	...	...	...	1	...	...	...	
Apoplexy	1	...	9	7	...	...	1	...	9	7	...	...	Two fatal (male) cases with right hemiplegia. A female with right, another with left, hemiplegia.
Intracranial Tumour	...	...	1	2	1	1	...	...	...	1	...	...	Tumour in left corpus striatum, with hemiplegia of right side and affection of speech in fatal case.
Parasitic Disease	...	...	...	1	...	...	...	...	...	1	...	...	Hydatid cyst in brain.

TABLE I (*continued*).

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	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Diseases of Nervous System (*continued*).													
Diseases of Cerebral Arteries	...	...	1	1	...	...	...	...	1	1	...	...	Aneurysm of basilar artery in a man aged 45. Embolism of cerebral arteries and heart disease in the female.
Cerebral Affection	...	...	3	...	3	...	...	...	...	...	...	...	Diagnosis uncertain.
Meningeo-myelitis	...	...	2	...	1	...	...	...	1	...	...	...	Fatal with nephritis and cystitis.
Spinal Atrophy	...	...	...	1	...	...	...	...	...	...	...	1	
Softening of Spinal Cord	...	...	1	...	...	...	...	...	1	...	...	...	
Spinal Disease	...	1	...	1	...	2	...	...	...	...	...	...	Diagnosis uncertain.
Paralysis	...	...	2	...	2	...	...	...	...	...	...	...	
Hemiplegia—Right	1	1	9	14	8	10	...	2	2	...	...	3	Three men and one woman with aphasia. Speech affected in four other cases.
Do., Left	1	1	16	11	13	8	2	1	1	1	1	2	Six men with speech affected. One with muscular atrophy. A woman with heart disease.
Paraplegia	2	1	9	12	6	10	2	1	2	1	1	1	A female also with paralysis of the left side of face.
Locomotor Ataxy	1	...	3	...	2	...	1	...	1	...	...	...	The fatal case with pyelo-nephritis.
Local Paralysis	...	...	1	...	1	...	...	...	...	...	...	...	Of muscles of left leg and sphincters.
Facial Paralysis	1	...	3	1	3	...	1	1	...	...	...	...	A man with paralysis of left side of face and right hemiplegia; another with paralysis of portio dura.
Infantile Convulsions	...	...	3	...	2	...	...	...	1	...	...	...	Fatal case complicated with rickets.
Epilepsy	2	2	41	17	35	19	3	...	3	...	2	...	A fatal case with enlargement of spleen. A female with atrophy of muscles of right thumb. A man with double pleuro-pneumonia recovered.
Vertigo	...	...	3	1	3	1	...	...	...	...	...	...	
Spasm of Muscle	...	...	...	1	...	1	...	...	...	...	...	...	Of the hands.
Shaking Palsy	...	...	...	1	...	1	...	...	...	...	...	...	
Chorea	...	4	10	31	7	26	2	2	...	3	1	4	Two of the fatal cases pregnant, one had empyema also. Of the male four were admitted with heart disease, and nine of the female. A girl contracted smallpox in the hospital.
Hysteria	...	4	...	26	...	25	...	4	...	...	...	1	Hysterical mania in two unrelieved cases.
Neuralgia	...	...	4	1	2	1	1	...	...	...	1	...	
Cephalalgia	...	...	3	2	3	2	...	...	...	...	...	...	
Sciatica	...	...	6	3	6	3	...	...	...	...	...	...	
Pleurodynia	...	...	3	4	2	4	...	...	...	...	1	...	
Hypochondriasis	...	...	4	...	4	...	...	...	...	...	...	...	
Mania	...	...	3	2	1	...	2	2	...	...	...	...	Acute in one man; chronic in the other two.

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	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
DISEASES OF NERVOUS SYSTEM (*continued*).													
Melancholia	...	...	1	1	1	...	...	...	...	1	...	...	Paresis cerebri in both cases.
Dementia	...	...	1	...	1	...	...	...	...	...	...	...	
Imbecility	...	...	1	...	...	...	1	...	...	...	...	...	
Nervous Exhaustion	...	...	1	1	1	1	...	...	...	...	...	...	
DISEASES OF THE CIRCULATORY SYSTEM.													
Pericarditis	...	...	3	1	1	...	...	...	1	1	1	...	Fatal, in the man with emphysema; in the woman combined with aortic disease.
Cardiac Dropsy	1	...	7	11	1	4	...	2	6	4	1	1	Fatal cases.—Males: two with hypertrophied hearts; three with albuminous urine; a female with ascites.
Valve Disease	...	1	11	15	5	11	1	...	5	5	...	...	Gangrene of both feet in a fatal male case. Among the females there was a case of chorea, and one of erysipelas of the face.
Do., *with Lung Complication*	...	...	5	3	1	...	...	...	4	2	...	1	Fatal cases. — Males: three with emphysema; one broncho-pneumonia. Females: one emphysema and albuminous urine, the other bronchitis. A man had cyanosis also.
Aortic Disease	1	1	22	7	13	4	3	...	5	2	2	2	Males: six regurgitation; three double murmur; one ruptured valve; one constriction. A female with both obstruction and regurgitation.
Mitral Disease	2	4	14	29	8	18	2	3	6	8	...	4	Five males and three females with aortic disease also. Seven women and one man with obstruction. Three men and three women with regurgitation. One female hydronephrosis; one adherent pericardium; one with paraplegia.
Pulmonary Valve	...	...	...	1	...	1	...	...	...	...	...	...	Obstruction, congenital (?).
Hypertrophy of Heart	...	...	1	...	...	...	...	...	1	...	...	...	
Cyanosis	...	...	2	...	2	...	...	...	...	...	...	...	
Angina Pectoris	...	...	1	1	1	1	...	...	...	...	...	...	
Aneurysm of Arteries	1	...	9	1	1	1	1	...	5	...	3	...	Fatal cases: two of abdominal aorta; one of arch of thoracic ditto; one of ascending aorta, and one of aorta (unspecified). The female, of the innominate artery (?).

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	M.	F.	M.	F.	M.	F.	M.	F.	M	F.	M.	F.	
Diseases of the Circulatory System (*continued*).													
Phlebitis	...	...	...	1	...	...	...	...	...	1	...	...	Pyæmia (?).
Obstruction to Veins	...	...	1	1	1	1	..	...	...	...	...	...	Both of femoral. The man w erysipelas of leg.
Disease of Lymphatic Glands	...	...	...	1	...	1	...	...	...	...	...	...	Enlargement of cervical.
Exophthalmic goitre	...	...	1	2	1	1	...	...	...	1	...	...	Heart disease in fatal case.
Addison's disease	...	...	...	1	...	...	...	...	...	1	...	...	
Diseases of the Respiratory System.													
Croup	...	...	1	2	...	2	...	...	1	...	...	...	
Laryngeal Catarrh	...	...	4	2	4	2	...	...	...	...	...	...	One hospital nurse.
Laryngitis	...	...	4	4	2	1	1	1	1	2	...	...	In fatal male case œdema of voc cords. Tracheotomy perform in a fatal female case.
Bronchial Catarrh	...	...	6	9	5	8	...	...	1	1	...	...	Fatal male case with partial collap of both lungs.
Acute Bronchitis	...	3	15	18	13	15	...	1	2	4	...	1	Two hospital nurses.
Chronic Bronchitis *with Emphysema*	2	3	44	31	25	22	3	3	12	5	6	4	A man with a fistulous opening int urinary passages.
Asthma	...	...	2	2	2	2	...	...	...	...	...	...	
Pneumonia—*Right side*	1	...	11	7	10	5	...	...	2	2	...	...	One hospital nurse.
Do., *Left side*	1	...	9	3	9	2	...	...	...	1	1	...	
Do., *Double*	...	...	3	3	2	...	...	1	1	2	...	...	Fatal male case with cirrhosis the liver. A female died a fe days after leaving the hospita against advice.
Do., *Lobular*	...	...	2	...	...	...	...	...	2	...	...	...	One with hooping-cough, the othe with albuminous urine.
Pleuro-pneumonia	...	...	16	6	12	3	...	...	2	2	2	1	Six males and three females, righ side.
Abscess of Lung	...	...	1	...	...	...	...	...	1	...	...	...	
Hæmoptysis	...	...	14	10	10	9	...	...	1	...	3	1	Cause of this affection uncertain.
Cirrhosis of Lung	1	...	1	...	2	...	...	...	...	...	...	...	
Atelectasis	...	...	...	1	...	...	...	1	...	...	...	...	
Pneumonic Phthisis	...	...	2	3	...	2	1	...	1	1	...	...	A female with heart disease.
Pleurisy	1	...	15	3	13	3	...	...	1	...	2	...	Six males and one female of th right side; one of each sex wi double pleurisy.
Empyema	...		1	...	1	...	...	...	...	...	...	...	Of right side.
Hydrothorax	1	...	16	6	14	6	...	...	2	...	1	...	Eight males and two females of th right side. A man died durin the operation of paracentesis.
Pneumothorax	...	...	5	1	2	1	1	...	2	...	...	...	Three men of the right side. Th woman with empyema also.

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	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
DISEASES OF DIGESTIVE SYSTEM.													
Stomatitis	...	...	1	...	1	...	...	...	...	...	...	...	
Parasitic Thrush	...	...	1	...	1	...	...	...	...	...	...	...	Odium albicans.
Quinsy	...	...	1	2	1	2	...	...	...	...	...	...	
Tonsillitis	...	3	7	16	6	19	...	...	...	...	1	...	Three hospital nurses.
Enlargement of Salivary Glands	...	...	...	1	...	1	...	...	...	...	...	...	
Stricture of Œsophagus	...	...	2	...	...	...	2	...	...	...	...	...	One died the day after removal from the hospital.
Gastritis	...	...	3	1	3	...	...	1	...	...	...	...	With, possibly, gastric ulceration in two cases.
Chronic Ulcer of Stomach	...	...	4	3	4	3	...	...	...	...	...	...	
Hæmatemesis	1	1	4	11	3	11	...	...	2	1	...	...	One man and two women with melæna. Two women with splenic enlargement.
Dyspepsia	...	1	4	8	2	8	2	...	...	...	...	1	
Gastrodynia	...	...	1	1	1	1	...	...	...	...	...	...	
Pyrosis and Vomiting	1	...	3	2	4	1	...	1	...	...	...	...	
Enteritis	...	...	...	1	...	...	...	...	...	1	...	...	Diphtheritic enteritis, with lobular pneumonia, ætat. 12 months.
Typhlitis	...	...	3	1	3	1	...	...	...	...	...	...	
Dysentery	...	...	8	3	2	3	1	...	4	...	1	...	
Ulcers of Intestines	1	...	2	...	1	...	...	...	2	...	...	...	Fatal cases: one of ileum; one of vermiform appendix. One with fistulous opening in left groin, communicating with large intestine, recovered.
Hæmorrhage from Bowel	...	...	...	1	...	1	...	...	...	...	...	...	
Intestinal Obstruction	...	...	5	2	2	...	...	..	3	2	...	...	In a female case colotomy was performed.
Strangulation	...	...	1	...	...	...	...	...	1	...	...	...	Of ileum in a loop of mesentery.
Abscess in Abdominal Walls	...	...	...	1	...	...	...	...	...	1	...	...	
Diarrhœa	...	...	14	15	14	12	...	1	...	1	...	1	Fatal case aged two years.
Colic	...	...	5	1	5	1	...	...	...	...	...	...	
Constipation	...	...	6	8	6	7	...	1	...	...	...	...	A woman with inguinal hernia.
Abscess of Liver	...	...	2	...	2	...	...	...	...	...	...	...	
Acute Atrophy	...	...	1	...	...	...	...	...	1	...	...	...	
Enlarged Liver	...	...	11	1	5	...	3	...	2	...	1	1	Three males with jaundice, one pleurisy, one ascites. Fatal cases: one in a typhoid state, the other with capillary bronchitis.
Cirrhosis of Liver	...	1	9	4	...	1	2	2	6	2	1	...	Seven males and four females, ascites. One female, jaundice, died.
Lardaceous Liver	...	...	1	1	1	...	...	...	...	...	...	1	The man also with waxy kidneys. The woman with ascites.
Parasitic Disease	...	2	1	3	...	3	...	...	1	2	...	...	Hydatid cysts.
Jaundice	1	...	10	6	8	5	2	...	1	...	...	1	Two men with ascites.

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	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Diseases of Digestive System (*continued*).													
Obstruction to Hepatic Ducts	...	...	1	6	...	6	...	...	1	...	...	...	Jaundice, impacted gall-stones, and peritonitis in male case; gall-stones in female cases.
Abdominal Tumours	...	...	3	5	2	2	1	2	...	1	...	...	A female contracted smallpox in the hospital.
Enlarged Spleen	...	...	1	...	1	...	...	...	...	...	...	...	
Leucocythemia	1	...	...	1	1	...	...	...	...	1	...	...	Fatal, with epilepsy.
Peritonitis—*Acute*	1	...	1	1	2	...	...	...	...	1	...	...	Fatal case with pelvic cellulitis also.
Do. *Chronic*	...	...	1	2	...	...	...	...	1	2	...	...	Females: one adherent pericardium and right hydrothorax, the other congenital narrowing of small intestine.
Ascites	...	1	13	4	7	2	2	1	3	2	1	...	A man contracted erysipelas in the ward.
Diseases of Urinary System.													
Tubal Nephritis	1	...	23	5	15	3	1	1	6	1	2	...	The fatal female case with heart disease. One hospital nurse.
Interstitial Nephritis	9	2	53	23	29	18	5	2	20	5	8	...	Fatal cases.—Males: three with convulsions; one ascites; one gangrene of lower lobe of left lung; one left hemiplegia. A female with hydatid pregnancy. Amongst the recoveries were a man with aortic regurgitation, and a woman with convulsions.
Lardaceous Kidney	...	...	3	1	1	1	1	...	1	...	...	...	Fatal case with albuminuria. A man with necrosis of jaw, and another with blood in the urine, survived.
Chronic Pyelitis	1	...	2	...	1	...	...	...	2	...	...	...	Renal calculus and paralysis of bladder in a fatal case.
Hæmaturia Renalis	...	...	5	...	5	...	...	...	...	...	...	...	
Suppression of Urine	...	...	...	1	...	...	...	...	...	1	...	...	With uræmia.
Diuresis	...	...	1	...	1	...	...	...	...	...	...	...	
Renal Colic	...	...	1	...	1	...	...	...	...	...	...	...	
Renal Disease	...	...	1	...	1	...	...	...	...	...	...	...	Diagnosis uncertain.
Cystitis	...	...	1	1	1	1	...	...	...	...	...	...	
Irritable Bladder	...	...	...	3	...	3	...	...	...	...	...	...	
Diseases of Female Organs of Generation.													
Ovarian Disease	...	...	...	1	...	...	...	...	...	...	...	1	
Pelvic Cellulitis	...	1	...	12	...	10	...	1	...	1	...	1	Exhaustion in fatal case after inflammation of pelvic organs.

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	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
DISEASES OF FEMALE ORGANS OF GENERATION (*continued*).													
Pelvic Abscess	...	...	...	3	...	3	...	...	...	...	...	...	
Pelvic Hæmatocele	...	...	...	10	...	9	...	...	...	...	...	1	
Leucorrhœa	...	1	...	6	...	5	...	1	...	...	...	1	
Chronic Metritis	...	3	...	14	...	16	...	1	...	...	...	...	
Granular Cervix	...	...	...	1	...	1	...	...	...	...	...	...	
Elongation of Cervix	...	...	...	5	...	4	...	1	...	...	...	...	
Uterine Fibrous Tumour	...	...	...	12	...	10	...	...	...	...	...	2	
Anteversion	...	1	...	4	...	4	...	1	...	...	...	...	
Retroversion	...	...	...	5	...	5	...	...	...	...	...	...	One pregnant, with cystitis also; one with a misplaced ovary.
Anteflexion	...	1	...	7	...	7	...	...	...	...	...	1	
Retroflexion	...	...	...	4	...	4	...	...	...	...	...	...	
Lateriflexion	...	...	...	1	...	1	...	...	...	...	...	...	
Subinvolution	...	...	...	4	...	4	...	...	...	...	...	...	
Prolapsus Uteri	...	...	...	1	...	1	...	...	...	...	...	...	
Procidentia	...	...	...	1	...	1	...	...	...	...	...	...	
Amenorrhœa	...	...	...	6	...	2	...	1	...	...	...	3	
Dysmenorrhœa	...	...	...	6	...	6	...	...	...	...	...	...	
Menorrhagia	...	...	...	1	...	...	...	...	...	...	...	1	
Uterine Hæmorrhage	...	...	...	7	...	7	...	...	...	...	...	...	
Irregular Menstruation	...	...	...	2	...	2	...	...	...	...	...	...	
Uterine Disease	...	...	...	5	...	3	...	...	...	...	...	2	Not specified.
Pregnancy	...	1	...	5	...	5	...	...	..	1	...	...	Fatal case: dislocation of the uterus backwards; retention of urine and old peritonitis in a girl, aged 16.
Threatened Miscarriage	...	...	...	4	...	4	...	...	...	...	...	...	
Arrested Development of Uterus	...	...	...	1	...	1	...	...	...	...	...	...	
Periostitis	...	...	...	1	...	1	...	...	...	...	...	...	
Mollities Ossium	...	...	...	1	...	...	...	...	...	1	...	...	Parturition; craniotomy performed.
Angular Curvature of Spine	...	...	...	1	...	...	...	1	...	...	...	...	
Muscular Atrophy	...	...	3	...	2	...	1	...	...	...	...	...	
SKIN DISEASES.													
Erythema	1	...	1	2	2	2	...	...	...	...	...	...	
Do. *Nodosum*	...	...	1	5	1	4	...	...	...	...	...	1	
Do. *Tuberosum*	...	...	...	1	...	1	...	...	...	...	...	...	
Psoriasis	1	...	...	4	1	3	...	...	...	...	...	1	
Herpes Zoster	...	...	1	...	1	...	...	...	...	...	...	...	
Eczema	...	...	1	1	1	...	...	...	...	...	...	1	

TABLE I (*continued*).

DISEASES.	No. of medical cases in the hospital at beginning of 1871.		No. of medical cases admitted during 1871.		Discharged cured and relieved.		Discharged unrelieved.		Died.		Remaining at the end of year 1871.		Nature of complications, &c.
	M.	F.	M.	F.	M.	F.	M	F.	M.	F.	M.	F.	
SKIN DISEASES (*continued*).													
General Desquamation	...	1	...	...	...	1	...	...	...	...	...	...	
Debility	1	2	13	20	14	17	...	1	...	...	...	4	
Premature Birth	...	...	1	...	...	...	...	...	1	...	...	...	Death, of debility, within seven days.
POISONS.													
Mercurial Tremors	...	...	1	...	1	...	...	...	...	...	...	...	A water-gilder.
Lead	...	...	1	...	...	...	...	...	...	...	1	...	
Lead Colic	2	...	7	8	9	8	...	...	...	...	...	...	Of men, 8 were painters, 2 printers, 2 type-rubbers, one type-founder, one plasterer, one brass-finisher, one labourer. Seven women at the lead works.
Do. Palsy	...	...	7	...	7	...	...	...	...	...	...	...	
Copper	...	...	1	...	...	...	1	...	...	...	...	...	Swallowed a half-penny 7 months previous to admission (?).
Ammonia	...	...	...	1	...	1	...	...	...	...	...	...	
Phosphorus	...	...	...	1	...	1	...	...	...	...	...	...	Poisoning by the paste.
Sulphuric Acid	...	...	...	1	...	1	...	...	...	...	...	...	
Hydrochloric Acid	1	...	2	...	3	...	...	...	...	...	...	...	
Oxalic Acid	...	...	...	1	...	1	...	...	...	...	...	...	
Carbolic Acid	...	...	1	2	...	1	...	...	1	...	...	1	
Opium	...	...	4	4	4	4	...	...	...	...	...	...	A woman poisoned by the soap-and-opium liniment.
Alcohol—*Delirium Tremens*	2	...	25	3	25	3	1	...	1	...	...	...	
Do. *Intemperance*	1	...	32	15	31	15	...	...	2	...	...	...	One fatal case through drinking a large quantity of rum; the other epileptic.
Paraffine Oil	...	...	1	...	1	...	...	...	...	...	...	...	
Effects of Poisoning	...	...	1	1	1	1	...	...	...	...	...	...	Poison unknown.
Exposure to Cold	1	...	...	...	1	...	...	...	...	...	...	...	
Unclassified	3	1	1	5	3	4	...	1	...	...	1	1	

ABSTRACT OF TABLE I.

	No. of medical cases in the hospital at the beginning of the year.		No. of medical cases admitted during the year.		Discharged cured and relieved.		Discharged unrelieved.		Died.		Remaining in the hospital at the end of the year.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
General Diseases A	17	13	118	107	102	92	11	5	16	11	6	12
Do. Do. B	26	32	293	250	222	209	20	6	52	42	25	25
Diseases of the—												
Nervous System	10	14	153	144	110	115	17	13	29	18	7	12
Circulatory System	5	6	76	71	34	41	7	5	33	23	7	8
Glands	...	...	1	4	1	2	...	...	...	2	...	...
Respiratory System	7	6	172	111	126	83	6	7	32	20	15	7
Digestive System	6	9	130	112	88	90	15	9	28	17	5	5
Urinary Organs	11	2	90	34	55	26	7	3	29	7	10	...
Female Organs	...	8	...	128	...	115	...	6	...	2	...	13
Osseous System	...	...	...	3	...	1	...	1	...	1	...	...
Muscles	...	...	3	...	2	...	1	...	...	...	...	...
Skin	2	1	4	13	6	11	...	...	...	...	...	3
Debility	1	2	14	20	14	17	...	1	1	...	...	4
Poisons, &c.	7	...	83	37	83	36	2	...	4	...	1	1
Unclassified	3	1	1	5	3	4	...	1	...	...	1	1
	95	94	1138	1039	846	842	86	57	224	143	77	91
	189		2177		1688		143		367		168	
	2366				2366							

TABLE II.

Complete Cases of the Year, according to Diseases and Ages.

DISEASES.	Under 5 Yrs.		5–15.		15–25.		25–35.		35–45.		45–55.		55–65.		65–75.		75 and upwards.		TOTAL.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F	M.	F.	M.	F.	M.	F.
Smallpox	...	...	2	...	8	3	2	2	...	...	...	...	..	...	...	...	...	...	12	5
Scarlet Fever and Sequelæ	2	3	13	6	5	6	...	...	1	1	...	...	...	...	...	...	...	...	21	16
Typhus	...	...	2	...	1	5	1	1	1	1	...	...	...	...	...	...	...	...	5	7
Enteric Fever and Sequelæ	2	1	11	9	18	14	4	1	3	...	...	...	...	...	...	...	...	...	38	25
Continued Fever and Febricula	...	3	3	6	6	8	2	4	...	5	1	...	...	1	...	...	...	...	12	27
Ague	...	...	1	...	1	...	4	...	3	1	...	...	...	...	...	..	...	...	9	1
Erysipelas of Face	...	1	1	1	5	6	3	4	5	2	4	4	4	...	...	...	...	...	22	18
Other Diseases of Class A	2	2	2	3	4	2	...	1	2	1	...	...	...	...	...	...	...	...	10	9
Acute and Subacute Rheumatism (including Synovial and Gonorrheal)	...	...	3	2	31	32	29	16	19	8	11	5	2	2	1	...	...	...	96	65
Do. with Heart Complications	...	...	5	4	19	37	13	19	1	5	1	1	...	3	...	...	...	...	39	69
Other Rheumatic and Gouty Affections	...	...	1	...	4	1	8	6	9	4	9	1	5	4	...	...	...	...	36	16
Cancer	...	...	...	...	1	...	1	8	2	6	5	6	2	5	2	2	...	...	13	27
Scrofulous Diseases	3	1	6	3	26	22	22	17	26	10	8	...	4	1	...	1	...	...	95	55
Diabetes	...	...	...	...	...	...	2	1	2	1	2	1	1	...	...	...	...	...	7	3
Other Diseases of Class B	1	...	1	1	...	10	2	6	...	2	3	2	1	1	...	...	...	...	8	22
Apoplexy	...	...	...	...	...	...	1	...	2	1	3	2	1	2	2	2	1	...	10	7
Hemiplegia	...	...	1	...	1	1	1	2	6	6	6	6	8	6	3	1	...	...	26	22
Paraplegia	...	...	...	1	...	2	1	5	3	1	2	3	2	...	2	...	...	...	10	12
Epilepsy, Vertigo and Convulsions	3	1	7	4	12	6	12	3	7	4	2	...	4	1	...	1	...	...	47	20
Chorea	...	1	7	23	2	5	...	2	...	...	...	...	...	...	...	...	...	...	9	31
Hypochondriasis and Hysteria	...	...	...	1	...	16	1	7	3	4	...	...	...	1	...	...	...	...	4	29
Neuralgia (Pleurodynia, &c.)	...	...	1	1	1	2	6	4	5	1	...	1	1	...	...	1	...	...	14	10
Other Nervous Diseases	1	...	2	5	3	3	10	5	6	1	6	...	6	1	2	...	...	...	36	15
Heart Disease	...	...	7	7	20	21	13	14	13	7	7	12	3	4	3	1	...	...	66	66
Aneurysm of Arteries	...	...	...	...	...	...	3	...	3	1	1	...	...	...	...	...	...	...	7	1
Diseases of the Veins	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	1	...	...	1	2
Diseases of the Glands	...	...	...	1	1	...	...	2	...	1	...	...	...	...	...	...	...	...	1	4
Laryngitis and Laryngeal Catarrh	3	1	...	...	2	1	...	2	2	2	1	...	...	...	...	...	...	...	8	6
Bronchitis and Bronchial Catarrh	6	5	3	5	4	1	1	5	4	7	2	5	1	...	...	1	...	...	21	29
Chronic Bronchitis with Emphysema	...	...	...	...	3	5	3	3	11	3	12	8	8	7	3	2	...	2	40	30
Pneumonia	4	1	...	3	12	2	4	2	3	1	1	3	2	1	...	...	...	...	26	13

Deaths according to Diseases and Ages.

DISEASES.	Under 5 Yrs.		5–15.		15–25.		25–35.		35–45.		45–55.		55–65.		65–75.		75 and upwards.		TOTAL.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Smallpox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet Fever and Sequelæ	1	1	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	3
Typhus	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Enteric Fever and Sequelæ	...	...	...	2	3	3	...	...	3	...	...	...	...	...	...	...	...	...	6	5
Continued Fever and Febricula	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ague	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Erysipelas of Face	...	...	...	...	1	...	...	1	1	1	2	...	2	...	...	...	...	...	6	2
Other Diseases of Class A	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	1
Acute and Subacute Rheumatism (including Synovial and Gonorrheal)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Do. with Heart Complications	...	...	...	...	...	2	...	...	...	...	...	...	...	1	...	...	...	...	...	3
Other Rheumatic and Gouty Affections	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
Cancer	...	...	...	...	1	...	1	3	2	3	3	3	1	2	1	1	...	...	9	12
Scrofulous Diseases	3	1	3	1	11	8	8	9	10	4	3	...	2	1	...	...	...	...	40	24
Diabetes	...	...	...	...	...	...	1	...	1	1	1	...	...	...	...	...	...	...	3	1
Other Diseases of Class B	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
Apoplexy	...	...	...	...	...	...	1	...	2	1	3	2	1	2	2	2	...	...	9	7
Hemiplegia	...	...	...	...	1	...	...	...	1	...	...	...	1	1	...	...	...	...	3	1
Paraplegia	...	...	...	...	...	1	...	...	1	...	...	...	1	...	...	...	...	...	2	1
Epilepsy, Vertigo and Convulsions	2	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	4	...
Chorea	...	...	...	1	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	3
Hypochondriasis and Hysteria	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Neuralgia (Sciatica and Pleurodynia)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Nervous Diseases	1	...	...	1	2	1	3	3	1	1	2	...	2	...	...	...	...	...	11	6
Diseases of the Heart	...	...	2	2	9	6	6	5	3	4	5	2	1	2	2	1	...	...	28	22
Aneurysm of Arteries	...	...	...	...	...	...	2	...	3	...	...	...	...	...	...	...	...	...	5	...
Diseases of the Veins	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
Diseases of the Glands	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	2
Laryngitis and Laryngeal Catarrh	...	...	...	...	1	1	...	...	...	1	...	...	...	...	...	...	...	...	1	2
Bronchitis and Bronchial Catarrh	2	...	1	...	...	...	...	1	...	3	...	1	...	...	...	...	...	...	3	5
Chronic Bronchitis with Emphysema	...	...	...	...	1	...	1	...	2	...	6	3	2	1	...	...	...	1	12	5
Pneumonia	2	...	...	...	...	...	1	1	2	1	...	2	...	1	...	...	...	...	5	5

DISEASES.	Under 5 Yrs.		5–15.		15–25.		25–35.		35–45.		45–55.		55–65.		65–75.		75 and upwards		TOTAL.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Pleuro-pneumonia and Pleurisy	3	...	3	5	13	5	17	2	8	2	...	1	...	...	1	...	...	...	45	15
Hæmoptysis	...	...	...	...	2	4	4	3	4	...	1	2	...	...	...	...	...	...	11	9
Other Diseases of the Respiration	1	3	1	...	3	2	5	3	1	...	1	...	1	...	...	...	...	...	13	8
Tonsillitis	1	...	1	1	3	16	...	4	1	...	...	...	...	...	...	...	...	...	6	21
Hæmatemesis	...	...	...	...	2	1	...	2	2	4	1	4	...	1	...	...	...	...	5	12
Ulcers of Stomach and Intestines	...	...	...	...	...	1	4	...	3	2	...	...	...	...	...	...	...	...	7	3
Inflammation of Alimentary Canal	...	1	...	...	4	1	...	1	2	...	1	...	...	...	...	...	...	...	7	3
Intestinal Obstruction	...	...	...	...	1	...	1	...	2	...	1	1	1	1	...	...	...	...	6	2
Dysentery and Diarrhœa	3	2	5	3	2	3	4	4	5	1	1	4	...	...	1	...	...	...	21	17
Dyspepsia and Vomiting	...	...	1	1	...	4	3	2	4	2	1	2	...	...	...	...	...	...	9	11
Colic and Constipation	1	...	2	2	4	2	1	3	...	1	3	...	...	1	...	...	...	...	11	9
Diseases of Liver and Ducts	1	...	...	...	10	2	6	9	6	5	11	4	1	1	...	...	...	...	35	21
Enlargements of the Spleen and Abdominal Tumours	...	...	1	...	1	3	1	2	...	...	1	1	...	...	1	...	...	...	5	6
Peritonitis and Ascites	...	...	2	2	1	1	3	1	5	2	3	2	2	...	...	...	...	...	16	8
Other Diseases of Digestive System	1	...	...	...	...	1	...	...	...	2	...	...	1	...	1	...	...	...	3	3
Acute Bright's Disease of Kidneys	...	...	2	1	6	...	6	2	5	1	2	1	...	...	...	...	...	...	21	5
Chronic ditto	...	...	1	1	6	6	17	6	21	9	9	3	4	1	...	...	...	...	58	26
Other Urinary Diseases	1	...	1	...	2	1	2	2	2	...	3	1	...	1	1	...	...	...	12	5
Pelvic Cellulitis	...	...	...	...	...	7	...	2	...	2	...	1	...	...	...	...	...	...	...	12
Pelvic Hæmatocele	...	...	...	1	...	2	...	3	...	3	...	...	...	...	...	...	...	...	...	9
Chronic Metritis	...	...	...	...	...	1	...	14	...	2	...	...	...	...	...	...	...	...	...	17
Uterine Tumours	...	...	...	...	...	...	...	3	...	3	...	3	...	1	...	...	...	...	...	10
Displacements of Uterus	...	...	...	...	...	3	...	18	...	7	...	...	...	...	...	...	...	...	...	28
Disorders of Menstruation and Uterine Hæmorrhage	...	...	...	...	...	6	...	8	...	4	...	...	...	...	...	...	...	...	...	18
Other Diseases of Female Organs	...	...	...	...	...	11	...	11	...	5	...	2	...	...	...	...	...	...	...	29
Diseases of the Bones	...	...	...	...	...	2	...	1	...	...	...	...	...	...	...	...	...	...	...	3
Diseases of the Muscles	...	...	...	...	...	...	1	...	...	...	2	...	...	...	...	...	...	...	3	...
Diseases of the Skin	...	...	3	2	1	3	...	3	1	2	...	1	1	...	...	...	...	...	6	11
Debility	1	...	4	3	1	5	5	4	2	1	2	2	...	3	...	...	...	...	15	18
Lead Poisoning	...	...	...	...	2	3	10	2	3	3	...	1	...	...	...	...	...	...	16	8
Alcohol	...	...	...	...	3	4	31	5	11	3	11	2	4	3	...	1	...	...	60	18
Other Poisons, &c.	3	1	2	...	1	5	1	2	3	1	1	1	1	...	...	...	1	...	13	10

DISEASES.	Under 5 Yrs.		5–15.		15–25.		25–35.		35–45.		45–55.		55–65.		65–75.		75 and upwards		TOTAL.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Pleurisy and Pleuro-pneumonia	2	...	...	...	...	...	...	1	2	...	...	1	...	...	1	...	...	...	5	2
Hæmoptysis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Respiratory Diseases	1	...	...	...	1	1	3	...	...	...	...	...	...	...	...	...	...	...	5	1
Tonsillitis	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
Hæmatemesis	...	...	...	...	...	...	...	...	2	...	...	1	...	...	...	...	...	...	2	1
Ulcers of Stomach and Intestines	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	2	...
Inflammation of Alimentary Canal	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Intestinal Obstruction	...	...	...	...	...	...	...	...	2	...	1	1	1	1	...	...	...	...	4	2
Dysentery and Diarrhœa	...	1	...	...	1	...	1	...	2	...	...	...	...	...	...	...	...	...	4	1
Dyspepsia and Vomiting	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Colic and Constipation	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diseases of Liver and Ducts	...	...	...	...	4	1	1	1	...	1	6	...	...	1	...	...	...	...	11	4
Enlargement of Spleen and Abdominal Tumours	...	...	...	...	...	1	..	1	...	...	...	...	...	...	...	...	...	...	...	2
Peritonitis and Ascites	...	...	...	1	1	...	...	1	2	1	1	2	1	...	...	...	...	...	5	5
Other Diseases of Digestive System	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1
Acute Bright's Disease of Kidney	...	...	1	1	1	...	2	...	1	...	...	...	...	...	...	...	...	...	5	1
Chronic ditto	...	...	1	...	3	1	6	2	8	2	3	...	1	...	...	...	...	...	22	5
Other Diseases of Urinary Organs	...	...	1	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	2	1
Pelvic Cellulitis	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Pelvic Hæmatocele	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chronic Metritis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Uterine Tumours	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Displacements of Uterus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Disorders of Menstruation and Uterine Hæmorrhage	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of Female Organs	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Diseases of the Bones	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
Diseases of the Muscles	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diseases of the Skin	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Debility	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Lead Poisoning	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Alcohol	..	...	...	...	...	...	1	...	1	...	1	...	...	...	...	...	...	...	3	...
Other Poisons, &c.	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...

TABLE IV,

Medical Cases of the year, according to Occupations and Diseases.

MALES.

Occupations.	General diseases, A.	Rheumatic affections.	Scrofulous diseases.	Other diseases of Class B.	Nervous diseases.	Circulatory diseases.	Glandular diseases.	Respiratory diseases.	Disorders of digestion.	Urinary disorders.	Skin diseases, &c.	Total.	Remarks.
Apprentices	2	...	...	...	...	...	...	1	...	...	...	3	
Attendants at a lunatic asylum	...	...	1	...	...	...	...	1	...	...	...	2	
Attorneys and their Clerks	...	...	...	...	3	...	...	...	1	...	1	5	
Bakers	...	2	2	1	2	2	...	2	3	...	...	14	One abscess of brain.
Bargemen	...	...	...	...	...	...	...	1	1	...	...	2	
Barmen	1	1	1	...	2	...	...	1	...	1	1	8	
Basket and brush makers	1	1	...	...	1	1	...	...	...	1	...	5	
Billiard marker	...	...	...	...	...	...	...	1	...	...	...	1	
Blacksmiths and ironfounders	1	...	1	...	1	3	...	...	...	2	...	8	Two with aneurysm of aorta.
Blind maker	...	1	...	...	...	...	...	...	...	...	...	1	
Bookbinders and sellers	1	2	...	...	1	...	...	2	...	1	...	7	
Bootmakers	3	1	2	...	1	2	...	3	3	...	...	15	Two with hydatid disease of viscera.
Boxmaker	1	...	...	...	...	...	...	...	...	...	...	1	
Brass finishers	...	3	3	...	1	...	...	...	...	...	1	8	One suffered from effects of lead poisoning.
Brewers	2	1	...	...	...	...	...	3	1	1	1	9	One alcoholic poisoning.
Bricklayers	...	5	...	...	1	2	...	3	4	1	...	16	
Builders	1	...	...	...	...	...	...	1	...	...	...	2	
Butchers	1	...	...	1	4	3	...	1	4	1	1	16	One aneurysm of aorta, one progressive muscular atrophy.
Butlers	...	3	...	...	...	1	...	1	...	...	...	5	
Cabinet makers and joiners	1	4	3	1	4	2	...	3	5	...	2	25	
Cabmen	...	4	...	...	2	...	...	4	...	...	...	10	One with locomotor ataxy, a 'night cabman.'
Carmen	2	5	3	1	...	...	...	1	3	1	1	17	
Carpenters	1	3	...	...	3	1	...	6	4	...	...	18	Two with amyloid disease of liver.
Carvers and gilders	3	3	...	...	...	...	1	1	1	1	...	10	
Cellarmen	...	...	...	...	1	1	...	...	...	2	...	4	
Chair makers	2	1	...	...	1	...	...	...	1	...	...	5	
Cheesemonger	...	...	1	...	...	...	...	...	...	...	...	1	
Chemists	...	1	1	...	2	...	...	2	...	1	...	7	One with gangrene of the lung and phthisis.
Cigar makers and tobacconists	1	3	1	...	2	...	...	...	...	...	...	7	
Clerks	...	5	1	...	2	...	...	1	2	...	2	13	Two alcoholic intemperance.
Clergyman	...	1	...	...	...	...	...	...	...	...	...	1	
Clothiers	...	...	...	...	...	...	...	...	1	...	1	2	
Coachbuilders	1	3	...	...	2	1	...	...	...	2	...	9	
Coachmen	...	6	...	1	1	1	...	4	...	...	...	13	
Coal porters	...	4	...	...	1	...	...	...	1	...	...	6	
Colorman	...	...	...	...	...	...	...	...	1	...	...	1	

MALES.

Occupations.	General diseases, A.	Rheumatic affections.	Scrofulous diseases.	Other diseases of Class B.	Nervous diseases.	Circulatory diseases.	Glandular diseases.	Respiratory diseases.	Disorders of digestion.	Urinary disorders.	Skin diseases, &c.	Total.	Remarks.
Commercial travellers	2	...	...	...	...	1	...	3	...	1	1	8	
Commissionaires	...	1	1	...	...	...	...	1	1	1	1	6	
Compositors	...	...	...	...	3	...	...	...	...	1	...	4	One aphasia, one paraplegia, one epilepsy.
Cooks and confectioners	2	...	...	...	1	...	...	4	1	...	...	8	
Coopers	...	1	...	...	...	...	...	2	...	...	...	3	
Corndealer	...	...	...	...	1	...	...	...	...	...	...	1	
Costermongers	1	6	3	...	...	2	...	2	3	2	...	19	One chronic albuminuria and gangrene of lung.
Cutler's boy	...	1	...	...	...	...	...	...	...	...	...	1	
Dairyman	...	...	...	...	...	...	...	...	...	1	...	1	
Deal porters	...	...	...	...	...	...	...	...	...	2	...	2	
Detective	...	...	...	...	1	...	...	...	...	...	...	1	
Dock labourers	2	...	...	1	...	2	...	1	...	2	...	8	Two died with tubal nephritis, one with aneurysm of aorta.
Dramatist	...	...	...	...	...	...	...	...	...	...	1	1	From the effects of 'exposure to cold.'
Drapers	1	1	...	1	...	1	...	1	...	1	...	6	One diabetes.
Draymen	1	...	...	...	1	...	...	1	...	2	...	5	
Dyers	...	...	...	...	1	...	...	2	...	...	...	3	
Engine drivers	...	1	2	...	1	1	...	1	...	...	...	6	One died with abscess of lung.
Engineers and engine fitters	1	...	2	1	1	2	...	3	2	1	...	13	Two with amyloid disease, one aneurysm of basilar artery.
Electro-plater	...	...	...	...	...	...	...	1	...	...	...	1	
Errand boys	6	1	1	...	...	...	...	...	2	...	1	11	Two scarlatinal dropsy.
Excavators	...	1	1	...	2	1	...	...	...	2	...	7	
Factory lads	...	1	...	...	...	...	...	...	1	1	...	3	
Farmers and farm labourers	...	2	...	1	...	...	...	...	1	1	1	6	One progressive muscular atrophy.
Farriers	...	...	...	...	2	...	...	1	1	1	...	5	
Fishmongers and fish porters	...	1	1	...	...	...	...	2	1	1	...	6	
Flock cleaner	...	...	...	...	1	...	...	...	...	...	...	1	Chorea.
French polishers	1	...	1	1	...	...	...	...	...	...	1	4	
Gamekeeper	...	...	...	...	...	...	...	1	...	...	...	1	
Gardeners	...	1	1	1	1	1	...	1	1	2	...	9	One aneurysm of aorta, one locomotor ataxy (a 'market gardener').
Gasfitters and stokers	...	1	1	1	1	2	...	2	...	...	...	8	
General dealers	...	...	1	...	...	1	...	...	1	...	...	3	
Gentlemen	...	...	...	...	1	...	...	...	...	...	1	2	One apoplexy, the other 'opium poisoning.'
Gold beaters and workers	...	...	...	...	...	2	...	1	1	...	...	4	
Glass blower	...	...	...	...	...	1	...	...	...	...	...	1	With heart disease and emphysema.
Greengrocers	...	1	...	...	...	2	...	1	...	1	...	5	
Grocers	...	2	...	...	...	...	...	2	...	...	...	4	Two with pleuritic effusion.
Grooms	1	...	1	1	1	...	...	...	...	...	...	4	
Gunmakers	...	1	1	...	...	...	...	...	...	...	...	2	
Hairdressers and carders	1	1	2	...	...	...	...	...	1	...	...	5	
Harness makers	...	...	...	...	1	...	...	...	1	...	1	3	
Hatters	...	...	1	...	1	...	...	...	...	1	...	3	

TABLE IV (*continued*).

MALES.

Occupations.	General diseases, A.	Rheumatic affections.	Scrofulous diseases.	Other diseases of Class B.	Nervous diseases.	Circulatory diseases.	Glandular diseases.	Respiratory diseases.	Disorders of digestion.	Urinary disorders.	Skin diseases, &c.	Total.	Remarks.
Horse dealers and keepers	...	...	...	...	...	...	...	1	1	1	...	3	
Hop-picker	...	1	...	...	...	...	...	...	...	...	...	1	
Hose-pipe maker	...	1	...	...	...	...	...	...	...	...	...	1	
Hospital servant	...	1	...	...	...	...	...	...	...	...	...	1	
Hot-presser	...	...	1	...	...	...	...	...	...	...	...	1	
House decorator	...	...	...	...	...	...	...	...	...	...	1	1	
Jewellers	...	1	1	...	...	1	...	...	...	...	...	3	
Inland Revenue officers	...	1	...	...	1	...	...	...	...	...	...	2	
Labourers	10	12	6	3	11	2	...	13	12	11	6	86	Two with hepatic abscess, three with chronic dysentery.
Lamplighters	...	...	...	...	...	...	...	1	...	...	1	2	
Law writers	1	1	...	...	...	...	...	1	...	...	...	3	
Leather cutters and stainers	1	1	...	...	2	1	...	1	...	...	...	6	
Lightermen	...	...	1	...	...	...	...	...	1	...	...	2	
Lithographic printers	...	...	...	...	...	...	...	1	1	...	...	2	Acute atrophy of liver in one case.
Lodging-house keeper	...	...	...	...	...	...	...	...	...	...	1	1	
Masons	1	...	1	...	...	3	...	2	...	...	...	7	
Millmen	...	2	...	...	...	...	...	...	...	...	...	2	
Miller	1	...	...	...	...	...	...	...	...	...	...	1	
Miners	...	...	...	...	...	1	...	1	...	...	...	2	One (?) aneurysm of aorta, the other emphysema.
Musicians	...	...	1	...	2	1	...	...	...	...	...	4	Two with hemiplegia.
Newsagents	1	1	...	...	...	1	...	...	...	...	...	3	
Night Watchmen	...	1	...	1	...	...	...	...	...	1	...	3	
Ostler	...	...	...	...	...	...	...	...	...	...	1	1	Congestion of lungs after drinking a large quantity of rum.
Packers	1	4	1	...	1	...	...	...	...	...	...	7	
Packing-case makers	...	1	1	...	...	...	...	...	...	...	...	2	
Painters and paper colourers	2	3	3	...	4	...	...	2	2	2	7	25	Three with epilepsy.
Paper hangers and rulers	1	1	1	...	...	...	...	1	...	...	...	4	
Pawnbroker	...	...	...	...	...	...	...	1	...	...	...	1	
Photographer	...	...	...	...	...	...	...	...	1	...	...	1	
Plasterers and Plumbers	...	1	...	...	1	...	...	...	...	2	3	7	
Police constables	...	...	...	...	1	...	...	1	...	...	1	3	One alcoholic intemperance.
Porters	4	7	2	...	8	6	...	10	3	3	...	43	
Postman	...	...	...	...	...	...	...	...	...	1	...	1	
Potmen	...	3	...	...	1	1	...	1	1	1	1	9	A fatal case with delirium tremens.
Pressmen and printers	4	2	3	...	...	1	...	3	1	3	3	20	Three with enteric fever.
Publicans	...	...	1	1	1	...	...	...	...	...	1	4	One with delirium tremens.
Railway labourers	...	1	1	...	...	1	...	1	1	...	2	7	A pointsman with delirium tremens.
Riveters	...	...	...	...	...	...	...	2	...	...	...	2	
Roadmender	...	...	1	...	...	...	...	...	...	...	...	1	
Saddlers	1	1	...	...	1	...	...	...	...	...	...	3	
Sailors	3	2	3	1	1	3	...	6	4	4	...	27	One aneurysm of aorta, two with chronic dysentery.
Sawyers	1	...	1	...	1	1	...	...	...	1	...	5	
Scalemaker	...	...	...	...	...	...	...	...	1	...	...	1	
Schoolboys	11	2	...	...	3	...	...	...	1	1	5	23	Six with enteric fever.

MALES.

Occupations.	General diseases, A.	Rheumatic affections.	Scrofulous diseases.	Other diseases of Class B.	Nervous diseases.	Circulatory diseases.	Glandular diseases.	Respiratory diseases.	Disorders of digestion.	Urinary disorders.	Skin diseases, &c.	Total.	Remarks.
Servants (gentlemen's)	1	1	1	...	...	2	...	...	...	...	...	5	
Shipwrights	...	...	...	...	1	...	...	...	1	...	...	2	
Shoemakers	1	1	5	1	1	...	...	1	3	3	1	17	
Shopmen	1	1	1	1	1	1	...	1	...	1	...	8	
Singer	...	...	...	...	1	...	...	...	...	...	...	1	With locomotor ataxy.
Smiths	...	1	1	...	2	...	...	...	1	...	...	5	
Soldiers	...	...	2	...	1	1	...	...	2	1	1	8	
Stereotyper	...	...	...	...	1	...	...	...	...	...	...	1	Facial palsy.
Stokers	...	...	...	...	...	...	...	...	2	1	...	3	
Street sweeper	...	...	...	...	...	...	...	...	...	...	1	1	Drunk.
Surgeons	...	...	...	...	...	...	...	...	...	...	2	2	One suffered from the 'effects of intemperance.'
Surgical instrument maker	...	...	...	...	...	...	...	...	...	...	1	1	
Sweeps	1	...	...	...	...	...	...	1	...	...	1	3	
Tailors	1	1	4	2	...	4	...	5	1	3	...	21	Two with aortic aneurysm.
Teacher	...	...	1	...	...	...	...	...	...	...	...	1	
Telegraphist	...	...	...	1	...	...	...	...	...	...	...	1	
Tinmen	...	1	2	2	...	...	...	...	2	...	...	7	
Typefounders	...	2	1	...	...	...	...	...	...	...	3	6	
Waiters	...	2	...	...	1	...	...	1	1	...	...	5	
Walking-stick maker	...	1	...	...	...	...	...	...	...	...	...	1	
Warders (prison)	...	2	...	...	...	...	...	...	...	...	...	2	
Warehousemen	2	3	...	...	2	...	...	1	...	...	1	9	
Watchmen	...	1	...	...	3	...	...	...	1	...	1	6	One with otitis and meningitis, one with gallstones.
Water gilder	...	...	...	...	...	...	...	...	...	...	1	1	
Waterman	...	1	...	...	...	...	...	...	...	...	...	1	
Weavers	1	...	1	...	...	...	...	...	1	...	...	3	
Whalebone cutter	...	...	...	...	...	...	...	...	1	...	...	1	
Wine coopers	...	...	...	...	...	...	...	...	1	1	...	2	
Umbrella makers	...	...	2	...	...	...	...	...	...	...	...	2	
Undertaker	...	1	...	...	...	...	...	...	...	...	...	1	
Upholsterers	...	...	...	...	...	...	...	...	1	2	...	3	Two with hæmaturia renalis.
Unspecified (including children)	40	34	8	4	51	11	...	44	34	19	49	294	

FEMALES.

Occupations.	General diseases, A.	Rheumatic affections.	Scrofulous diseases.	Other diseases of Class B.	Nervous diseases.	Circulatory diseases.	Glandular diseases.	Respiratory diseases.	Disorders of digestion.	Urinary disorders.	Female organs.	Skin diseases, &c.	Total.	Remarks.
Artificial flower makers	...	1	...	...	...	...	...	1	...	2	...	...	4	
Ballet girls	...	...	1	...	...	1	...	...	...	...	...	...	2	
Barmaids	...	1	...	...	...	...	...	...	1	...	...	...	2	
Billiard-table maker	...	1	...	...	...	...	...	...	...	...	...	...	1	
Bonnet-shape maker	...	...	...	...	...	1	...	...	...	...	...	...	1	
Bookfolders and binders	1	...	2	...	1	...	...	...	...	1	...	...	5	
Boot stitchers	1	...	...	...	1	...	...	...	...	...	...	...	2	
Carpet sewer	...	...	...	...	1	...	...	...	...	...	...	...	1	
Cartridge makers	...	1	...	...	...	...	...	...	...	...	...	1	2	
Charwomen	...	...	...	1	1	...	...	1	2	...	...	1	6	
Cooks	1	2	...	...	3	1	...	2	6	1	...	2	18	One with delirium tremens.
Corkcutter	1	...	...	...	...	...	...	...	...	...	...	...	1	
Domestic (married)	21	37	26	25	46	27	1	37	31	16	111	15	393	
Dressmakers	...	2	2	...	1	4	...	2	3	...	1	...	15	Three with jaundice.
Druggist	...	...	1	...	...	...	...	...	...	...	...	...	1	
Fancy box makers	2	1	...	...	1	...	...	1	1	...	...	...	6	
Fancy trimmers	...	...	...	...	...	1	...	...	...	...	...	1	2	
French polishers	...	1	...	...	...	...	...	2	...	...	...	...	3	Two with pneumonia.
Firewood cutters	...	1	...	...	...	...	...	...	1	...	...	...	2	
Furrier	...	...	1	...	...	...	...	...	...	...	...	...	1	
Hawkers	3	...	...	...	4	...	...	2	3	1	...	1	14	Two with acute tonsillitis
Housekeepers	...	2	...	...	2	...	...	...	...	...	...	...	4	Two with hemiplegia.
Instrument maker	...	...	...	...	...	1	...	...	...	...	...	...	1	
Lady's-maids	...	2	...	...	1	1	...	...	...	...	...	...	4	
Laundresses	1	4	1	3	5	...	1	4	1	...	...	3	23	Three with cerebral hæmorrhage, one with Addison's disease.
Lead workers	1	...	...	1	...	...	...	...	...	...	...	7	9	
Machinists	1	1	...	...	...	3	...	...	1	1	1	...	8	
Needlewomen	1	3	3	1	4	3	...	2	1	2	...	3	23	
Nurses (hospital)	7	4	...	...	...	...	...	5	6	2	1	1	26	*Vide* TABLE I.
,, (domestic)	1	5	1	1	1	4	...	1	6	...	1	...	21	
Paper stainer	...	...	...	...	...	...	...	...	...	...	...	1	1	Periostitis.
Parasol coverers	1	1	...	...	...	...	...	...	...	...	...	...	2	
Pauper	...	...	...	...	...	...	...	...	1	...	...	...	1	
Pickle-bottler	...	...	...	...	...	...	...	1	...	...	...	...	1	
Prostitutes	...	...	...	...	...	...	...	...	...	...	1	1	2	One poisoned by laudanum.
Rope-winder	...	...	...	...	...	...	...	...	...	1	...	...	1	
Sackmaker	...	...	...	1	...	...	...	...	...	...	...	...	1	
Scholars	3	...	...	...	4	1	...	2	1	...	...	...	11	
Servants	18	40	9	3	13	16	1	8	18	5	6	8	145	
Shirt ironers	...	1	...	...	...	...	...	1	...	...	...	...	2	
Shopwomen	1	...	...	...	...	...	...	1	2	...	...	...	4	
Toy makers	1	...	...	...	...	1	...	...	...	...	...	...	2	
Unspecified (including children)	54	54	14	20	69	12	1	44	36	4	14	31	353	

TABLE SHOWING THE AVERAGE STAY IN HOSPITAL, &c.

Within — Weeks of admission.	No. of Patients discharged.		Died.	
	M.	F.	M.	F.
1	157	105	89	46
2	141	115	31	14
3	124	147	24	16
4	146	104	15	13
5	90	106	9	12
6	79	80	10	7
7	42	58	8	12
8	42	34	8	2
9	36	46	6	2
10	23	27	3	6
11	6	14	3	4
12	8	17	4	3
13	7	6	2	2
14	6	7	1	3
15	4	3	1	...
16	4	2	2	...
17	1	3	1	...
18	3	6	1	1
19	4	5	...	...
20	1	...	...	...
21	1	2	3	...
22	...	1	...	...
23	1	1	...	...
24	2	...	...	...
25	2	...	...	...
26	...	1	...	...
27	...	4	...	...
29	1	...	...	...
30	...	...	1	...
31	...	3	...	...
35	...	...	1	...
49	...	1	...	...
53	...	1	1	...
54	1	...	...	...

The deaths which took place within one week of admission were on the days as shown to the right, No. 1 being the day of admission.

	M.	F.
1	28	9
2	16	6
3	14	6
4	8	9
5	7	5
6	7	6
7	9	5

The total number of deaths during the year was 367

Of these there occurred within 24 hours of admission ..... 37, about $\frac{1}{10}$

Within one week of admission ... 135, above $\frac{1}{3}$

„ a fortnight „ ... 180, about $\frac{1}{2}$

„ a month „ ... 248, about $\frac{2}{3}$

The average time of fatal cases in Hospital was in days { Males, 27·22 / Females, 27·48 } 27·32

The total number of discharges during the year was ... 1831

Of these the number whose stay in Hospital did not exceed a fortnight was ..... 518 ..... above $\frac{1}{4}$

Those whose stay did not exceed three weeks ..... 789 ..... „ $\frac{3}{8}$

„ „ „ four weeks ..... 1039 ..... „ $\frac{1}{2}$

„ „ „ six weeks ..... 1394 ..... „ $\frac{3}{4}$

The average stay in Hospital of patients discharged was in days ..... { Males, 28·87 / Females, 34·5 } 31·7

The average time of all medical cases in Hospital was in days ..... { Males, 29·64 / Females, 33·62 } 31·55

There are 230 beds in the medical wards, giving the number of possible pernoctations for the year, 230 × 365, or 83,950; but of the ten medical wards one was partially closed during a portion of the year. This would take away about 140 from the possible number of pernoctations, leaving 83,810

The actual number of pernoctations has been as follows:

Of cases admitted in 1870 or 1871 and discharged in 1871	58,057	
Of cases remaining in at the end of the year 1871	6,527	
Of fatal cases of the year	10,029	
		74,613
Giving a difference of		9,197

This gives a nightly average of 25·19 empty beds, — about 11 for males and 14 for females, and the time between successive occupants about 94 hours on an average, or about 3·25 days a month.

A MORTALITY TABLE,

Showing the period of the day at which the deaths of the Medical cases occurred.

DEATHS OF THE MALES.

In 189 cases, 76 died between the hours of 4 a.m. and noon.
„ „ „ 48 „ „ noon and 8 p.m.
„ „ „ 65 „ „ 8 p.m. and 4 a.m.

The time at which death took place was not stated in 43 cases.

DEATHS OF THE FEMALES.

In 95 cases 32 died between the hours of 4 a.m. and noon.
„ „ „ 31 „ „ noon and 8 p.m.
„ „ „ 32 „ „ 8 p.m. and 4 a.m.

The time at which death took place was not stated in 48 cases.

SURGICAL REPORT.

TABLE I,

Showing the total Number of Cases of each Disease under Treatment during the year 1871, with the Results.

DISEASES.	No. of surgical cases in the hospital at the beginning of 1871.		No. of surgical cases admitted during 1871.		Discharged cured or relieved.		Discharged unrelieved.		Died.		Remaining at the end of year 1871.		Nature of complications, &c.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
GENERAL DISEASES, A.—													
Phagedæna	...	...	3	5	3	4	...	...	...	...	...	1	In one, a female aged 2, phagedæna of labia followed after measles.
Erysipelas—													
a. Simple	...	...	10	5	8	4	...	...	2	...	...	1	9 of scalp; several followed slight injuries. A male, aged 46, had erysipelas of head and face, and died within twenty-four hours of admission. 2 of lower extremity; one, a male aged 44, complicated with hip-joint disease, died of exhaustion.
b. Phlegmonous	...	...	5	5	4	1	...	...	1	2	...	2	A male, aged 43, had erysipelas of abdomen, penis, and scrotum, died of exhaustion. Of females, 2 deaths, both had erysipelas of the left lower extremity, followed by sloughing, aged respectively 67 and 54 years.
c. Diffuse Inflammation	3	1	37	29	37	29	...	...	...	...	3	1	Of upper extremity 25; of lower extremity 39. The primary cause generally, being an injury.
Pyæmia	...	...	4	2	...	2	...	...	4	...	...	...	In the female cases the disease followed uterine disturbance. Of males, one aged 5 died four days after admission, cause not known; one, aged 23, had necrosis of third lumbar vertebra, pus in the theca vertebralis, and in left hip-joint, and general purulent subarachnoid effusion over brain, death three days after admission; the other, aged 5, followed abscess of finger ten weeks before admission, died on the fifteenth day after admission.
GENERAL DISEASES, B.—													
Gonorrhœal Rheumatism	...	...	2	1	2	1	...	...	...	...	...	...	The female had had three attacks previously.

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	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
GENERAL DISEASES, B. (*continued*).													
Syphilis—													
A. Primary Syphilis—													
Hard Chancre ...	11	5	40	20	45	19	...	...	...	...	6	6	Of males, 25 had sequelæ while in hospital; 4 were operated upon for phimosis, and 7 had bubo. Of females, in 10 the seat of disease was labium; 6 had sequelæ; 5 bubo.
Indurated Bubo	2	...	3	2	5	2	...	...	...	...	...	...	
Soft Chancre ...	4	4	37	42	35	39	...	...	...	...	6	7	Of males, 17 had bubo, one paraphimosis; 7 were operated upon for phimosis; 2 had psoriasis over the body while in hospital. Of females, one had bubo, 2 psoriasis.
Phagedænic Sore	...	1	26	10	25	10	...	...	...	...	1	1	Of males, 13 situated on glans, 3 with phimosis; one opened into urethra; one complicated with profuse hæmorrhage; 2 had bubo; one followed by pustulous eruption. Of females, 8 situated on labia; 3 followed by secondary symptoms; one situated on nates and on inner surface of thigh.
B. Hereditary Syphilis	...	...	...	1	...	1	...	...	...	...	...	...	Complicated with jaundice.
Secondary Syphilis—													
1. Local Syphilitic Affections—													
Face	...	1	1	...	1	1	...	...	...	...	...	...	
Nose	...	...	1	1	1	1	...	...	...	...	...	...	
Larynx	...	...	3	1	1	...	...	..	...	...	2	1	One male, aged 30, complicated with purpura also.
Tongue	1	1	1	2	2	3	...	...	..	...	...	...	
Pharynx	...	1	6	5	5	5	1	1	...	...	...	..	All had ulceration of soft palate; one hard also.
Rectum	...	...	1	...	1	...	...	...	...	...	...	...	
Anus	...	4	...	...	...	4	...	...	...	...	...	...	
Penis	...	...	2	...	2	...	...	...	...	...	...	...	Both tertiary.
Testicle	...	...	5	...	5	...	...	...	...	...	...	...	
Bone	2	..	5	3	7	3	...	...	...	...	...	...	Of males, 4 of skull; 3 of tibia. Of females, 2 tibia, one frontal.
Skin	5	11	38	116	40	119	...	...	1	..	2	8	Ulceration of skin 31; in several skin transplanting was performed with benefit; condylomata, 59; psoriasis 19; rupia 13; one, a male aged 30, died of exhaustion; rhagades digitorum 8; scaly 18; tubercular and pustular 5.
Muscles	...	...	1	...	1	...	...	...	...	...	...	...	Syphilitic tumours about pectoral muscles, with paralysis of the left deltoid.

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	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
GENERAL DISEASES, B. (*continued*).													
Local Syphilitic Affections—													
Mammæ	...	...	...	1	...	1	...	...	...	...	...	...	The tumour was removed.
Cancer—													
A. Scirrhus—													
Œsophagus	...	...	3	1	1	...	2	1	...	...	...	...	
Rectum	...	...	2	...	1	...	1	...	...	...	...	...	
Female Breast ...	...	4	...	22	..	14	...	8	...	3	...	1	Removal of entire breast in 11. Tw deaths; one, aged 52, had pyæm and recovered, but subsequent died from exhaustion consequen on return of disease in axillary glands and pleura; the other, aged 55, died from pyæmic pleuro-pneu monia and chronic nephritis. I two the diseased portion only wa removed; both recovered. I four the disease was recurrent i the mammæ; one had been ope rated upon no less than six time portions only of the breast an skin having been removed a each operation (these operations have all been necessary within a period of four years). In one the increase was so rapid that the patient died from exhaustion, n second operation having been performed. In seven the disease had advanced to such an extent that it was beyond the reach of operation; in the others the disease was recurrent in the mammæ and glands, the first operation having been performed twelve months previously. In the one remaining in, electrolysis was being tried but had not materially affected the growth.
Lymphatic Glands	...	...	...	1	...	1	...	...	...	...	...	...	Recurrent after breast had been re moved; glands were removed by operation.
B. Medullary Cancer—													
Lymphatic Glands	...	...	1	4	...	1	1	...	...	3	...	...	In the one relieved a prior operation was done 1870, again returned and again removed. Of the three deaths one, aged 41, had cancer of the liver and peritonitis. In the other two deaths the disease was situated about the groin and pelvis.

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	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
GENERAL DISEASES, B. (*continued*).													
B. Medullary Cancer—													
Jaws	...	...	2	1	...	1	1	...	1	...	...	...	In one aged 16 years; disease produced death by exhaustion; no operation was performed.
Testicle	...	...	5	...	4	...	...	...	1	...	...	...	In all the testicle was removed. One, aged 42, had fatal peritonitis, the disease extending up the cord.
Female Breast	...	...	...	4	..	3	...	...	...	1	...	...	In all the entire breast was removed. One, aged 41, died of exhaustion; one, aged 55, was operated upon before in 1868; the entire breast was this time removed.
Bone	...	1	6	2	2	...	2	2	...	1	2	...	A female, aged 16, was remaining in from 1870; amputation had been performed at the shoulder-joint; she subsequently sank from exhaustion due to return of the disease about scapula and axilla. In two the disease was situated in the tibia; amputation was performed, both recovered.
Uterus	...	...	...	1	...	1	...	...	...	...	...	...	
Rectum	...	...	2	1	...	...	2	...	...	...	...	1	
Bladder	...	...	1	...	1	...	...	...	...	...	...	...	
c. Epithelial Cancer—													
Face	...	...	5	1	4	1	1	...	...	...	...	...	In all the disease was removed. In the one not relieved the disease rapidly returned in the glands of neck.
Lips	...	...	2	1	2	1	...	...	...	...	...	...	In all removed.
Mucous Membrane of Palate and Gums	...	..	5	...	5	...	...	...	...	..	...	...	Two cases were admitted twice, relieved somewhat by the repeated application of the actual cautery.
Tongue	1	...	9	2	3	2	5	...	2	...	...	...	In five the diseased portions were removed; in one, aged 53, the entire tongue was removed; the patient had recurrent hæmorrhage and died. In the other death the patient sank from exhaustion, the disease involving glands of neck; no operation had been performed. One patient, not relieved, had been admitted three times.
Penis	...	...	4	...	4	..	...	...	...	...	...	...	In all the penis was amputated.

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	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
GENERAL DISEASES, B (*continued*).													
c. Epithelial Cancer—													
Lymphatic Glands	...	...	...	1	...	...	...	1	...	...	...	...	Return of disease in femoral and inguinal glands. Amputation of thigh performed two years ago for epithelial disease in the cicatrix of a burn.
Uterus	...	...	...	1	...	1	...	...	...	...	...	...	
Skin	...	...	2	1	2	1	...	...	...	...	...	...	In all the disease was removed.
b. Melanotic—													
Skin	...	...	1	...	1	...	...	...	...	...	...	...	Situated on sternum, was removed
Breast	...	...	...	2	...	1	...	1	...	...	...	...	Admitted twice; at first breast was removed, subsequently returned in axillary glands, and was again removed.
Scrofula—													
Eye	...	...	1	1	1	1	...	...	...	...	...	...	
Lymphatic Glands.	...	...	...	1	...	1	...	...	...	...	...	...	
Testicle	...	...	10	...	10	...	...	...	...	...	...	...	In one, aged 36, profuse hæmorrhage suddenly occurred.
Female Breast	...	...	...	1	...	1	...	...	...	...	...	...	
Bone	...	1	...	1	...	1	...	...	...	...	...	1	
Joints	7	5	15	19	14	17	3	1	4	...	1	6	Of sacro-iliac synchondrosis 2; of hip 32, in 3 males death was the result of exhaustion; of knee 6, in one, a boy aged 7, had amputation of thigh performed, recovered, but died suddenly from convulsions, due to tubercular meningitis; of ankle one, amputation of leg, lower third, was performed; of elbow 4, in one resection was performed; of carpus one, amputation above wrist was performed.
Cellular Tissue	...	...	2	1	2	1	...	...	...	...	...	...	
Skin	...	...	1	2	1	2	...	...	...	...	...	...	
Chronic Rheumatic Arthritis	1	...	2	2	3	2	...	...	...	...	...	...	3 of shoulder; one of hip; one of knee.

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	M.	F.	M.	F.	M.	F.	M	F.	M.	F.	M.	F.	
DISEASES OF THE NERVOUS SYSTEM.													
Neuralgia	...	...	2	1	2	1	...	...	...	...	...	...	All of cicatrices; in the female it was removed, and she was cured; in the male it was in a cicatrix on the inner side of knee, from which several years back an exostosis had been removed, application of actual cautery over several places was tried, finally it was laid open and he recovered. In a male, aged 39, amputation, lower third of forearm, was performed for abiding pain in a cicatrix after accident.
Lupus	..	..	...	1	...	1	...	...	...	...	...	...	Opened into trachea.
DISEASES OF THE EYE.													
Lachrymal Fistula	...	...	...	4	...	4	...	...	...	...	...	...	Canaliculus opened up in all.
Suppuration in Orbit	...	...	1	1	1	...	...	...	...	1	...	...	Meningitis caused death, *vide* 'Causes of Death,' p. 71.
Hypopyon	...	...	2	...	2	...	...	...	...	...	...	...	In one pus evacuated.
Pannus	...	...	1	...	1	...	...	...	...	...	...	...	
Corneal Fistula	...	...	1	...	1	...	...	...	...	...	...	...	Followed iridectomy.
Malignant Disease	...	...	1	1	1	...	1	...	...	...	...	...	One of iris, the other of eyelids.
Conjunctivitis	...	...	...	1	...	1	...	...	...	...	...	...	
Gonnorhœal Ophthalmia	...	...	2	...	2	...	...	...	...	...	...	...	
Catarrhal do.	...	1	1	2	1	3	...	...	...	...	...	...	
Rheumatic do.	...	...	3	2	2	2	...	...	...	...	1	...	
Acute do.	...	...	...	1	...	1	...	...	...	...	...	...	
Keratitis	...	3	7	10	7	13	...	...	...	...	...	...	
Ulcer of Cornea	1	1	3	6	2	5	2	...	...	...	...	2	
Opacity of Cornea	...	1	10	11	8	10	1	...	...	...	1	2	
Staphyloma	...	...	1	5	...	5	1	...	...	...	...	...	
„ Posterior	...	...	...	1	...	1	...	...	...	...	...	...	
Choriodo-Retinitis	...	...	1	...	...	...	1	...	...	...	...	...	

TABLE I (*continued*).

DISEASES.	No. of surgical cases in the hospital at the beginning of 1871.		No. of surgical cases admitted during 1871.		Discharged cured or relieved.		Discharged unrelieved.		Died.		Remaining at the end of year 1871.		Nature of complications, &c.
	M.	F.	M.	F.	M.	F.	M	F.	M.	F.	M.	F.	
Diseases of the Eye (*continued*).													
Rheumatic Iritis	...	...	...	3	...	3	...	...	...	...	...	...	
Syphilitic Iritis	...	...	6	1	5	1	...	...	...	...	1	...	
Retinitis	...	...	2	...	2	...	...	...	...	...	...	...	
Amaurosis	2	...	4	...	...	...	6	...	...	...	...	...	
Cataract	...	...	15	8	11	7	2	1	...	...	2	...	14 extractions.
Glaucoma	...	1	2	7	1	8	1	...	...	...	...	...	The one not relieved refused operation. In all others, iridectomy was performed.
Total Disorganisation of Eyeball	...	...	...	5	...	4	...	1	...	...	...	...	2 extirpation of globe; one abscission.
Synechia	...	...	7	...	7	...	...	...	...	...	...	...	4 Iridectomies.
Ectropion	...	...	...	1	...	1	...	...	...	...	...	...	All relieved by operation.
Trichiasis and Entropion	...	...	...	4	...	4	...	...	...	...	...	...	
Strabismus	...	...	5	11	4	11	...	...	...	...	1	...	All were operated on.
Diseases of the Ear.													
Polypus	...	...	...	1	...	1	...	...	...	...	...	...	Removed.
Lacerated Membrani Tympani	...	...	2	...	2	...	...	...	...	...	...	...	In both caused by a severe fall.
Foreign body in Ear	...	...	...	2	...	2	...	...	...	...	...	...	In both extracted.
Diseases of the Nose.													
Epistaxis	...	...	1	5	1	5	...	...	...	...	...	...	In several plugging of the posterior nares had to be performed.
Polypus	...	...	1	1	1	1	...	...	...	...	...	...	In both removed.
Fibro-cellular Tumour	...	...	1	...	1	...	...	...	...	...	...	...	Removed.
Cartilaginous Tumour on side of Septum	...	...	...	1	...	...	...	1	...	...	...	...	
Diseases of the Circulatory System.													
Aneurism— *b.* Sacculated— Thoracic Aorta	...	...	1	...	...	...	...	...	...	...	1	...	

DISEASES.	No. of surgical cases in the hospital at the beginning of 1871.		No. of surgical cases admitted during 1871.		Discharged cured or relieved.		Discharged unrelieved.		Died.		Remaining at the end of year 1871.		Nature of complications, &c.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
DISEASES OF THE CIRCULATORY SYSTEM (*continued.*)													
Aneurism—													
Subclavian Artery.	...	...	2	...	...	...	...	...	1	...	1	...	In one aged 32, ligature of subclavian in its third part was performed, died subsequently of pyæmia; in the other (remaining in) the aneurism is most extensive, treated by manipulation and pressure, but no improvement has taken place.
Gluteal (Diffuse) ..	...	...	1	...	...	...	...	...	1	...	...	...	Ligature of right common iliac, hæmorrhage, death on the second day. The case was one of sacro-iliac disease, with ulceration into a branch of internal iliac artery.
Popliteal	2	...	3	...	3	...	...	...	2	...	...	...	In all ligature of the femoral artery was performed. One aged 49 died, the ligature remained one month, a sinus remained, however, open to the place of ligature three months; it was then laid open, hæmorrhage three days after took place, and he died of exhaustion four months after the operation.
Phlebitis	...	1	3	1	3	2	...	...	...	...	...	...	Two cases complicated with abscess, one occurred after parturition.
Varicose Veins.....	1	...	3	8	3	7	...	...	...	...	1	1	In three hæmorrhage at time of admission; the radical cure by ligature was performed in two cases; in one complicated with extensive ulceration, transplantation of skin was done.
Inflamed Lymphatics ...	...	...	3	3	3	3	...	...	...	...	...	...	
Do. Glands	...	...	8	5	7	4	...	...	...	...	1	1	
Suppuration of Glands...	...	1	13	9	12	10	...	...	...	...	1	...	In one, a female, severe phagedenic ulceration took place, of the surrounding skin.
Obstruction of Lymphatics	...	...	1	...	1	...	...	...	...	...	...	...	
Abscess	...	...	1	2	1	2	...	...	...	...	...	...	One of tuberculous origin.
DISEASES OF THE LIPS.													
Malformations—													
a. Single Harelip ...	...	...	4	3	4	3	...	...	...	...	...	...	Six were operated upon, all with good results. One aged 6 months (also had cleft palate) had diarrhœa while in hospital, operation deferred.

DISEASES.	No. of surgical cases in the hospital at the beginning of 1871.		No. of surgical cases admitted during 1871.		Discharged cured or relieved.		Discharged unrelieved.		Died.		Remaining at the end of year 1871.		Nature of complications, &c.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Diseases of the Lips (*continued*).													
Malformations—													
b. Double Harelip ...	...	...	3	3	2	2	1	1	...	...	...	...	Three complicated with cleft palate; five operations, one being operated upon twice. In one a week ... complicated also with cleft palate, the operation was deferred.
Abscess of the Cheek ...	...	...	1	...	1	...	...	...	...	...	...	...	
Diseases of Mouth.													
Cancrum Oris	...	...	...	1	...	1	...	...	...	...	...	...	
Diseases of the Jaws, including the *Antrum*.													
Fibrous Tumour	...	1	1	...	...	1	1	...	...	...	...	...	One aged 35, growing on lower jaw removed; the other in the meso-ethmoid region, no operation was performed, aged 65.
Abscess of Antrum	...	...	1	...	1	...	...	...	...	...	...	...	Perforation was performed.
Osseous	...	...	1	...	1	...	...	...	...	...	...	...	Of left superior maxilla, removed the entire bone.
Diseases of the Gums.													
Epulis	...	...	...	1	...	1	...	...	...	...	...	...	Removed.
Abscess	...	...	2	3	2	3	...	...	...	...	...	...	
Diseases of Tongue.													
Abscess	...	...	1	...	1	...	...	...	...	...	...	...	
Ranula	...	...	2	...	2	...	...	...	...	...	...	...	One followed by acute glossitis, after passing seton.
Diseases of Fauces and Palate.													
Enlarged Tonsils	...	...	4	...	4	...	...	...	...	...	...	...	In all excision was performed.

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	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
DISEASES OF FAUCES AND PALATE (*continued*).													
Malformations—													
A. Cleft Palate ...	...	...	1	8	1	7	...	1	...	...	...	...	Five of hard and soft, four of soft only. In one the operation was successful the first time; in one severe and repeated secondary hæmorrhage took place from the posterior palatine artery on the left side, it was plugged, and the case terminated quite successfully; in one it was performed twice; in one it was successful after the third operation; in one a small foramen existed after the third operation, and she was supplied with an obturator.
DISEASES OF SALIVARY GLANDS.													
Inflammation	...	...	2	1	2	1	...	...	...	...	...	...	All of parotid.
Abscess	...	...	...	1	...	1	...	...	...	...	...	...	Incision.
Parotid Glandular Tumour	...	...	1	2	1	2	...	...	...	...	...	...	All removed.
Cystic	...	...	1	...	1	...	...	...	...	...	...	...	Punctured.
DISEASES OF THE ŒSOPHAGUS.													
Stricture	1	...	1	...	2	...	...	...	...	...	...	...	One caused by caustic potash; both relieved by bougies.
DISEASES OF THE INTESTINES.													
Hernia—													
Umbilical.....	...	...	1	5	1	4	...	...	...	1	...	...	Three reduced by taxis. One went back spontaneously; two were operated upon. In one, a female, aged 40, death from exhaustion on the second day.

DISEASES.	No. of surgical cases in the hospital at the beginning of 1871.		No. of surgical cases admitted during 1871.		Discharged cured or relieved.		Discharged unrelieved.		Died.		Remaining at the end of year 1871.		Nature of complications, &c.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Diseases of the Intestines (*continued*).													
Hernia—													
Inguinal	...	...	34	3	26	...	...	...	7	2	1	1	Two were reducible when admitted. Two complicated with hydrocele. 12 reduced by taxis; 6 underwent spontaneous reduction; 15 underwent operation; in three sac not opened. In 12 sac was opened; 8 deaths. 5 died with peritonitis, 2 from exhaustion. In one, a male, aged 51, there was found to be cancerous obstruction at the ileo-cæcal valve, the operation having given no relief.
Femoral	...	2	...	14	...	12	...	...	...	3	...	1	Two reducible when admitted. One went back spontaneously. 15 underwent operation; in six sac not opened—all recovered; in seven sac opened — one died from exhaustion the day after operation. In one gangrene of the intestine had taken place, and she died shortly after operation. One, a female, admitted into medical ward with symptoms of intestinal obstruction; a strangulated femoral hernia was discovered after death.
Ventral	...	...	1	1	...	1	...	...	1	...	...	...	One, congenital, occurred in a girl aged 3, and situated in lumbar region, was easily reducible; the other was a man, aged 57, admitted with small ventral hernia; an exploratory operation was performed without success; patient died next day, the cause of obstruction being a dense fibrous band stretching across the intestine and constricting it; peritonitis had set in.
Intestinal Obstruction ...	...	...	...	3	...	...	...	...	...	3	...	...	In all three cases colotomy was performed; all died. One, a woman, aged 52, was operated on for supposed femoral hernia; she died next day with acute peritonitis and gangrene of lower portion of ileum, caused by fibrous stricture. Another, aged 56, had annular stricture of rectum, and died ten days after operation of peritonitis. The other case died the day after operation of collapse.

DISEASES.	No. of surgical cases in the hospital at the beginning of 1871.		No. of surgical cases admitted during 1871.		Discharged cured or relieved.		Discharged unrelieved.		Died.		Remaining at the end of year 1871.		Nature of complications, &c.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Diseases of Rectum and Anus.													
Fistula in Ano	2	...	16	9	14	5	1	...	...	2	3	2	17 divided. In two threads were passed; one, not relieved, was complicated with cancer of penis. One, a woman, aged 21, died of peritonitis. One died of erysipelas three weeks after admission.
Hæmorrhoids—													
a. Internal	1	...	2	2	3	1	...	...	...	...	...	1	All ligatured.
b. External	...	...	7	4	7	4	...	...	...	...	...	...	Two ligatured; one excised; one treated with strong nitric acid.
Fissure of Anus	...	...	3	2	1	2	1	...	...	...	1	...	All divided.
Prolapsus	...	...	...	1	...	1	...	...	...	...	...	...	
Stricture	...	...	1	1	1	1	...	...	...	...	...	...	One treated with bougies.
Polypus	...	...	...	1	...	1	...	...	...	...	...	...	Removed.
Lupus of Anus	...	1	1	...	...	1	...	...	1	...	...	...	
Diseases of Urinary System.													
Cystitis—													
a. Acute	...	...	6	1	6	1	...	...	...	...	...	...	All admitted with symptoms of stone.
b. Chronic	1	...	6	1	5	1	...	...	1	...	1	...	One, aged 24, had tubercular disease of bladder. Death from exhaustion.
Calculus—													
a. Uric Acid	2	...	4	1	5	1	...	...	...	...	1	...	In nine lithotomy was performed. In the female dilatation of the urethra was performed.
d. Oxalate of Lime	...	...	2	...	2	...	...	...	...	...	...	...	One, aged 54, died of pyæmia after operation.
g. Phosphatic	...	...	1	...	...	...	...	...	1	...	...	...	
Diseases of Prostate Gland.													
Inflamed Prostate	...	...	2	...	2	...	...	...	...	...	...	...	

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	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
DISEASES OF URINARY SYSTEM (*continued*).													
Diseases of Prostate Gland—													
Enlarged Prostate	...	...	10	...	8	...	...	...	2	...	...	...	All admitted with retention. Death in the two cases was the result of uræmic poisoning.
Gonorrhœa and its Complications.													
Gonorrhœa	1	13	20	187	18	185	...	...	...	...	3	15	Of males, two had also cystitis and retention. One, aged 34, had gonorrhœal rheumatism and one typhoid fever while in hospital.
Balanitis	...	...	1	...	1	...	...	...	...	...	...	...	
Phimosis	1	..	23	...	22	...	2	...	...	...	...	...	The two unrelieved refused operation. 15 divisions.
Paraphimosis	...	...	4	...	4	...	...	...	...	...	...	...	In one the constricting fibres were divided.
Bubo	1	7	14	23	15	27	...	...	...	...	...	3	
Lacunar Abscess	...	...	3	...	3	...	...	...	...	...	...	...	
Epididymitis	...	...	11	...	11	...	...	...	...	...	...	...	
Warts	...	3	3	13	3	16	...	...	...	...	...	...	In several they were removed by operation.
Abscess in Vulva	...	...	...	7	...	7	...	...	...	...	...	...	
Diseases of Male Urethra.													
Stricture—													
a. Organic	3	...	39	...	30	...	3	...	4	...	5	...	Ten admitted with retention, one with slight extravasation; one, aged 41, had erysipelas of the face while in hospital and died of exhaustion; one, aged 35, had disease of kidneys and uræmic poisoning; one, aged 62, had diarrhœa while in hospital, and died of exhaustion.
c. Spasmodic	...	...	7	...	6	...	...	...	...	...	1	...	All admitted with retention.
d. Inflammatory	...	...	2	...	2	...	...	...	...	...	...	...	Catarrhal in origin.
Urinary Abscess	...	...	5	...	4	...	...	...	...	...	1	...	All complicated with stricture.
Do. Fistula	2	...	11	...	11	...	...	...	...	...	2	...	In three perineal section was performed with good result.
Extravasation of Urine	...	...	8	...	6	...	...	...	2	...	...	...	In one case of death the patient was admitted in a dying state, living but 5 hours after admission.
Impacted Calculus	...	...	1	...	1	...	...	...	...	...	...	...	Situated in spongy portion of urethra; removed by opening the urethra by a median incision.

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	M.	F.	M.	F.	M.	F.	M	F	M.	F.	M.	F.	
Diseases of Urinary System (*continued*).													
Diseases of the Penis and Testis.													
Malformation— *a.* Phimosis	1	...	13	...	13	...	1	...	...	...	...	...	10 divisions. The one not relieved refused operation.
Hydrocele of Tunica Vaginalis	1	...	17	...	18	...	...	...	...	...	...	...	In 10 the radical cure by injection was performed; in one case the testicle was diseased; seven tapped.
Acute Orchitis	...	...	3	...	3	...	...	...	...	...	...	...	In all the result of injury.
Diseases of Female Organs of Generation.													
Diseases of the Ovary	...	...	...	14	...	7	...	...	...	6	...	1	In 4 ovariotomy was performed, three fatal, one recovered. In two peritonitis followed after tapping, both were fatal.
Diseases of the Uterus.													
Non-Malignant Tumour— *b.* Polypus	...	...	...	4	...	4	...	...	...	...	...	...	All removed.
Diseases of the Vagina.													
Recto-Vaginal Fistula	...	...	...	1	...	1	...	...	...	...	...	...	Cured by operation.
Vesico-Vaginal Fistula	...	...	...	8	...	5	...	1	...	...	...	2	Five cured by operation; the one not relieved, refused operation.
Polypus	...	...	...	1	...	1	...	...	...	...	...	...	Polypus removed.
Functional Diseases of the Female Organs of Generation.													
Diseases of Vulva.													
Nævus of Labia	...	...	...	1	...	1	...	...	...	...	...	...	Injected with perchloride of iron.

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	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
FUNCTIONAL DISEASES OF THE FEMALE ORGANS OF GENERATION (*continued*).													
Diseases of Vulva—													
Abscess	...	...	...	5	...	5	...	...	...	...	...	...	
Hypertrophy	...	1	...	2	...	3	...	...	...	...	...	...	One of clitoris, removed.
Imperforate Hymen	...	...	...	1	...	1	...	...	...	...	...	...	
Vascular Tumour of Meatus Urinarius	...	...	...	7	...	5	...	2	...	...	...	...	Five relieved by operation.
Dysmenorrhœa	...	...	...	6	...	4	...	...	...	...	...	2	
Mechanical obstruction to the action of Uterus	...	...	...	1	...	...	...	1	...	...	...	...	
Cystic Tumour of Labia	...	...	...	2	...	2	...	...	...	...	...	...	In both removed.
Fibro-Celluloid	...	...	...	1	...	1	...	...	...	...	...	...	Removed by écraseur.
Warty Growths of Labia	...	...	...	1	...	1	...	...	...	...	...	...	Removed.
Affections connected with Parturition.													
Ruptured Perinæum	...	...	...	2	...	2	...	...	...	...	...	...	Cured by operation.
DISEASES OF THE FEMALE BREAST.													
Inflammation	...	...	...	2	...	2	...	...	...	...	...	...	In the case aged 57 a good deal of sloughing of the skin took place.
Abscess	...	...	...	4	...	4	...	...	...	...	...	...	Treated by incisions.
Non-Malignant Tumours *f.* Chronic Mammary.	...	1	...	6	...	7	...	...	...	...	...	...	All removed by operation.
Complex Cystic Tumour	...	...	...	4	...	4	...	...	...	...	...	...	All were operated upon; one aged 29 twice.
DISEASES OF THE ORGANS OF LOCOMOTION.													
Diseases of Bones.													
Ostitis	...	...	2	...	2	...	...	...	...	...	...	...	Both of tibia. One aged 14 trephined.
a. Periostitis	1	...	6	8	6	7	1	...	...	...	...	1	Of lower jaw one; of femur 4; of tibia 7; of radius one; of sternum one.

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	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
DISEASES OF THE ORGANS OF LOCOMOTION (*continued*).													
Diseases of Bones—													
Diffuse Periostitis— *a.* Acute Necrosis ...	...	2	7	4	4	3	...	...	1	...	3	2	One, a female, aged 8 years, had been in the hospital since 1869; she was admitted with acute necrosis of the tibia, and the sequestrum was not separated until April, 1871, when it was removed, and she was discharged with the wound nearly healed. Of humerus 2; of jaw 2, one being due to phosphorus; of tibia 9. One, aged 11, died of pyæmia 8 days after admission.
Chronic Abscess	...	...	1	2	...	1	1	...	...	...	...	1	
Caries	2	1	18	8	12	7	2	...	...	1	6	1	Of superior maxilla one; of carpus one; of spine 3. One, aged 30, died from exhaustion. Of tarsus 15. In one, a male, aged 44, Syme's amputation was performed. In nine, portions of diseased bone were removed.
Necrosis	4	5	42	25	39	26	...	1	2	...	5	3	Two deaths among males. Both died of exhaustion; one, aged 6, of necrosis of lower jaw; one, aged 18, of necrosis of ilium. Of occipital bone one; of superior maxilla 2; of inferior maxilla 13; of clavicle one; of humerus one; of ulna one; of scapula one; of carpus and metacarpus and phalanges, 19; of innominate bone 4; of femur 3; of tibia 19; of tarsus, metatarsus, and phalanges, 7. In two the sequestrum was spontaneously discharged. Forty-three operations were performed for the removal of dead bone; in five, of necrosis of phalanges, it became necessary to amputate.
Non-Malignant Tumours *b.* Myeloid Tumours .	...	...	...	1	...	...	...	...	...	1	...	...	
c. Cartilaginous	...	...	...	1	...	1	...	...	...	...	...	...	Growing from the metacarpal bone of thumb; removed.

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	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
DISEASES OF THE ORGANS OF LOCOMOTION (*continued*).													
Diseases of Bones—													
Non-Malignant Tumours *d.* Osseous (*Cancellated*)	1	...	7	...	7	...	1	...	..	..	..	..	Of mesial spine of superior maxilla one; of ungual phalanx 3; of femur 2; of fibula one; four were removed by operation.
Diseases of Joints.													
Acute Synovitis	4	1	36	29	39	24	...	...	...	...	1	6	Of shoulder-joint one; of elbow one; of wrist 4; of hip 2; of knee 53; of ankle 2. Several the result of injury.
Chronic do.	3	1	20	26	20	25	...	...	1	...	2	2	Of elbow 2; of wrist and carpus 3. In one aged 63 amputation through forearm was performed. Of hip 2; of knee 38. In one the actual cautery was applied with benefit; in three resection was performed, a male aged 7 and a female aged 12 years recovered. In six amputation was performed; all recovered; 4 males, 2 females. Of ankle 5. In one, a male aged 34, Syme's amputation was performed; recovered. One, a male, aged 19, had recurrent hæmorrhage and died of exhaustion after resection of knee.
Ulceration of Cartilage	...	1	15	7	9	4	...	1	2	1	4	2	Of elbow-joint one. Resection was performed. Of knee 21. Nine amputations; of these, three died, two of exhaustion, one, a female, of pyæmia. One amputation was complicated by the patient having variola two days after operation; recovered. Of ankle one. Amputation at the lower fourth of leg was performed, recovered.
Abscess	...	...	5	5	4	4	...	...	1	...	...	1	All of hip-joint. One, aged 44, died of exhaustion.
Ankylosis (Fibrous)	...	...	4	...	2	...	1	...	...	...	1	...	In two forcible flexion under chloroform was done with good results.
a. Deformity from Ankylosis	...	1	3	...	3	1	...	...	...	...	...	...	

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	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
DISEASES OF THE ORGANS OF LOCOMOTION (*continued*).													
Diseases of Joints—													
Loose Cartilage	...	1	1	1	1	2	...	...	...	...	...	...	In one, a female, aged 29, the cartilage was removed by the direct method.
Perforation of Joints ...	...	...	1	1	..	1	...	...	...	...	1	...	
Knock-Knee	1	...	2	3	2	2	...	...	...	.	1	1	In all the deformity was extreme.
Diseases of the Spine.													
Ulceration of Ligaments and Cartilage	...	...	1	1	1	1	...	...	...	...	...	...	
Psoas, Lumbar, and other Abscesses.....	2	...	15	3	12	1	1	..	...	2	4	...	All connected with disease of spine. One, aged 20, complicated with albuminuria; recovered. Two females, aged 20 and 32, died of exhaustion. Several were tapped and treated on the antiseptic principle, with good results.
Contraction of Tendons, Fasciæ, or Muscles	...	...	6	4	5	3	1	...	...	...	...	1	One contracted forefinger, due to whitlow; amputation was performed. In several tenotomy was performed.
Angular Deformity	1	...	10	3	8	2	2	...	...	...	1	1	One complicated with spina bifida; 3 admitted with partial paralysis. Several were supplied with supports, &c.
Lateral Curvature	...	...	1	5	...	5	1	...	...	...	...	...	All supplied with instruments to support spine.
Diseases of Muscles.													
Abscess	...	...	...	5	...	5	...	...	...	...	...	...	
Club-foot—													
a. Talipes Varus.....	...	1	8	9	3	6	2	1	..	...	3	3	Two males refused treatment. One, a female, advised to wait, as the child was but a year old. Tenotomy was performed on the rest.
b. Do. Valgus ...	...	...	1	2	1	2	...	...	...	...	...	...	Tenotomy in all.
c. Do. Equinus ...	2	...	8	3	10	3	...	...	...	...	...	...	Tenotomy in 10.
f. Equino-Valgus ...	...	...	3	1	2	...	1	1	...	...	...	...	
Wry-Neck	...	...	...	2	...	2	...	...	...	...	...	...	Tenotomy of sterno-mastoid tendon in both.

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	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
DISEASES OF THE ORGANS OF LOCOMOTION (*continued*).													
Diseases of Muscles—													
Enlarged Bursa Patellæ.	2	2	15	48	17	44	...	...	...	...	6	21	treated by incisions, two by puncture and pressure, the rest by iodine and blisters.
Enlargement of other Bursæ	1	...	6	1	6	1	...	...	1	...	...	...	One, aged 54, received a wound of the bursa over the olecranon. Had cellulitis; pyæmia; death. Of olecranon 5; of semi-membranosus 2; of tuber ischii 1.
Bursal Tumour	...	...	2	1	2	1	...	...	...	...	...	...	All of bursæ patellæ; removed.
DISEASES OF THE CELLULAR TISSUE.													
Inflammation	1	1	8	1	9	2	...	...	...	...	...	...	Of neck one; of upper extremity 5; of lower 5.
Abscess	8	4	84	32	75	32	2	...	7	2	8	2	About neck 12. Two males and one female died of exhaustion. Of upper extremity 17. Two males died of exhaustion. Of abdominal wall and back 19. One male, aged 1½ year, died of exhaustion. Of ischio-rectal fossa 14; of lower extremity 58. One aged 52, a male, had morbis cordis and died of exhaustion, and in one aged 14 the cellular sloughing became so extensive that amputation was performed above knee. In this case the mischief was due to being run over.
Slough	1	...	4	...	4	...	...	...	...	...	1	...	All of lower extremity and the result of injury.
Non-Malignant Tumours Fatty do.	...	2	2	8	2	10	...	...	...	...	...	...	All removed. On neck 4; on shoulders 6; on back one; in axilla one. In several primary union took place.

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	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
DISEASES OF THE CELLULAR TISSUE (*continued*).													
Non-Malignant Tumours													
Fibro-cellular do....	...	...	3	1	2	1	...	...	1	...	...	...	One in a boy, aged 13, was removed from between the vastus internus and sartorius muscles. One, a male, from the axilla. In the female it was large and growing in the groin. All were removed by operation.
Recurrent Fibroid .	...	...	6	1	2	...	...	...	2	1	2	...	In one, aged 50, relieved, had had no less than five operations performed at different periods during the last 3 years for removal of the growth, which was situated in the right loin and connected with the last rib, and growing among the abdominal muscles. He is returned also as being still in, the growth having again returned. In the other case remaining in, aged 64, the growth is situated on the inner side of knee, involving, probably, the joint. Electrolysis was being tried, but, beyond causing portions of the growth to slough, has done nothing to stop its progress. In a female, aged 20, tetanus came on after removal; it was removed from Scarpa's triangle. One male, aged 63, died of exhaustion, the tumour being in the lower dorsal region. All but one were removed by operation.
Serous Cysts	...	1	1	...	1	1	...	...	...	...	...	...	One, aged 39, a male, over parotid gland, removed; the other, a female, aged 11, remained in from last year.
Hæmorrhagic Cyst.	...	...	1	2	...	2	...	...	1	...	...	...	All laid open freely. In a male, aged 48, hæmorrhage took place after operation, due to ulceration into an artery. Ligature of right common carotid artery was performed, followed by death. The other two recovered without a bad symptom.
Dermoid Cysts.....	...	1	3	5	3	6	...	...	...	...	...	...	Of scalp 3; of eyebrow 4; of shoulder one; of lumbar region one. All were removed, except one, which was tapped.

TABLE I (*continued*).

DISEASES.	No. of surgical cases in the hospital at the beginning of 1871.		No. of surgical cases admitted during 1871.		Discharged cured or relieved.		Discharged unrelieved.		Died.		Remaining at the end of year 1871.		Nature of complications, &c.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Diseases of the Cutaneous System.													
Erythema—													
b. Nodosum	...	...	...	1	...	1	...	...	...	...	...	...	
Eczema	...	1	7	5	6	6	...	...	...	...	1	...	
Lepra	...	...	1	1	1	1	...	...	...	...	...	...	
Impetigo	...	...	1	...	1	...	...	...	...	...	...	...	
Ecthyma	...	...	1	...	1	...	...	...	...	...	...	...	
Ulcer	6	6	44	29	45	31	1	2	2	...	2	2	In five males transplanting of skin was done, with good result; in one, aged 46, amputation, upper third of leg, was performed, had secondary hæmorrhage, but recovered. In four females transplanting of skin was performed. In one, aged 33, it was necessary to divide the tendo Achillis. In one, aged 34, amputation of thigh was performed; recovered.
Boil	...	...	1	...	1	...	...	...	...	...	...	...	
Carbuncle	...	...	12	3	10	2	...	...	2	1	...	...	Several treated by incision. One female died of exhaustion. A male, aged 40, died of pyæmia.
Onychia—													
Maligna	1	...	2	2	3	1	...	...	...	...	...	1	
Molluscum	...	...	1	...	1	...	...	...	...	...	...	...	
Whitlow—													
a. Thecal Abscess	...	...	3	1	3	1	...	...	...	...	...	...	In three it became necessary to amputate finger.
Gangrene	1	...	3	1	2	1	...	...	1	...	1	...	One, a male, aged 53, had gangrene of the left foot; had also morbus cordis; death. 3 of feet. One, a female, of fingers; all dry but one, which was due to injury.
Mole	...	...	1	1	1	1	...	...	...	...	...	...	Both removed.
Nævus	...	1	1	6	1	5	...	2	...	...	...	...	2 injected with the perchloride of iron.
Warts	...	...	6	9	6	9	...	...	...	...	...	...	All removed by operation.
In-grown Nail	...	...	2	5	2	5	...	...	...	...	...	...	In all but one nail removed.
Poisoned Wounds	...	...	2	3	2	3	...	...	...	...	...	...	Of fingers 2, one followed by suppuration up the forearm; the other by symptoms of pyæmia, recovered.
Rodent ulcer	...	...	3	3	1	3	...	...	...	...	2	...	5 of face, one of neck.
Cheloid	...	...	2	1	1	1	1	...	...	...	...	...	One growing over chest; appeared much improved by being kept covered with gutta percha.

DISEASES.	No. of surgical cases in the hospital at the beginning of 1871.		No. of surgical cases admitted during 1871.		Discharged cured or relieved.		Discharged unrelieved.		Died.		Remaining at the end of year 1871.		Nature of complications, &c.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
GENERAL INJURIES.													
Burns and Scalds	7	2	41	35	30	14	...	...	11	18	7	5	48 burns, 18 deaths. Within twenty-four hours 10; within five days 2; within twelve days 4; within two months 2. 37 scalds, 11 deaths. Within 24 hours 4; within 5 days 4; within 12 days 2; within one month 1.
LOCAL INJURIES.													
A. *Injuries of the Head.*													
Contusion	...	...	5	3	5	3	...	...	...	...	...	...	
Scalp Wound—													
Bone not exposed ...	...	...	73	12	73	9	...	...	...	3	...	...	Among females two had erysipelas of head and face after admisssion. Among males, one aged 24, admitted with erysipelas. 4 had erysiplas, while in hospital, one diffuse suppuration.
Bone exposed	...	...	6	2	6	2	...	...	...	...	...	...	A female, aged 44, had severe hæmorrhage, and it was necessary to ligature occipital artery in wound.
Concussion of Brain.....	1	...	66	12	65	12	...	...	1	...	1	...	Several had epileptiform convulsions after admission, but no paralysis. One complicated with fractured humerus; one with fracture of ribs; one with fracture of clavicle. Several had scalp wounds. Laceration of the brain was the cause of death in a patient aged 35.
Fracture of the Vault of Skull—													
Compound—													
a. With Depression..	1	...	10	...	9	...	...	...	1	...	1	...	Of parietal 8. In a male remaining in from last year the fracture was cominnuted over the right parietal and the brain lacerated; the portions of detached bone were removed by Mr. Willett. Immediately after accident he had paralysis and loss of sensation on the left side. He recovered both sensation and motion, but as the wound cicatrized he had contraction of the forearm and fingers. In one, aged 36, was followed by partial facial paralysis. In 2 no cerebral symptoms of depression existed. In the case of death laceration of the brain substance had taken place, the man living but 2 days.

DISEASES.	No. of surgical cases in the hospital at the beginning of 1871.		No. of surgical cases admitted during 1871.		Discharged cured or relieved.		Discharged unrelieved.		Died.		Remaining at the end of year 1871.		Nature of complications, &c.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Local Injuries (*continued*).													
A. *Injuries of the Head*—													
Fracture of Base of Skull	...	...	15	2	1	1	...	...	14	1	...	...	**Death within 24 hours 7. In a female, aged 59, rupture of the middle meningeal artery had taken place. In two males most extensive laceration of the brain had happened, in one rupture of the lateral sinus had followed. Death within 2 days 6. A male, aged 30, had also fracture of the clavicle, fracture of eight ribs upper left side, fracture of five ribs lower right side, and laceration of the lung. Death within 3 days 2, a male, aged 10, of acute meningitis. One, a female, aged 31, had all the symptoms of fractured base; recovered. One, a male, aged, 28, had facial paralysis on the right side and ptosis on the left; recovered.**
B. *Of the Face.*													
Contusion	...	...	7	4	7	4	...	...	...	...	...	...	
Wound.....	...	...	3	...	3	...	...	...	...	...	...	...	
Fracture of Facial Bones	...	...	3	3	3	3	...	...	...	...	...	...	**All of nasal bones. One, aged 28, had concussion. One, aged 35, had chronic mania.**
Do. Lower Jaw...	...	...	5	3	3	3	...	...	...	...	2	...	**In one, aged 24, necrosis of a portion followed.**
Dislocation, Lower Jaw	...	...	...	1	...	1	...	...	...	...	...	...	
Injuries of the Eye.													
Contusion	...	...	3	2	2	2	1	...	...	...	...	...	
Do., with Rupture of the Globe.....	...	...	2	4	2	4	...	...	...	...	...	...	**In all the eyeball was removed.**
Do., with Dislocation of Lens	...	...	...	1	...	1	...	...	...	...	...	...	**With lacerated wound of eyelid, followed by suppuration of the globe and loss of sight.**
Do., with Hæmorrhage into Globe...	...	...	1	...	1	...	...	...	...	...	...	...	
Wound of the Eyelid ...	...	...	1	...	1	...	...	...	...	...	...	...	
Do. Conjunctiva..	...	...	1	...	1	...	...	...	...	...	...	...	**Due to burn with a squib.**

DISEASES.	No. of surgical cases in the hospital at the beginning of 1871.		No. of surgical cases admitted during 1871.		Discharged cured or relieved.		Discharged unrelieved.		Died.		Remaining at the end of year 1871.		Nature of complications, &c.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
LOCAL INJURIES (*continued*).													
Injuries of the Eye—													
Wounds of the Sclerotic	...	...	1	1	1	1	...	...	...	...	...	...	One followed by protrusion of the iris and loss of sight.
Do. Cornea	...	...	...	1	...	1	...	...	...	...	...	...	
Injuries of the Eyelids and Eye	...	1	6	2	5	3	...	...	...	...	1	...	In a male due to liq. ammoniæ. Suppuration of the globe followed and the eye had to be removed. In the female due to lime.
Foreign Body in Eye	...	...	1	...	1	...	...	...	...	...	...	...	Fragment of iron bedded in ciliary processes. Excision of globe.
Injuries of the Neck.													
Contusion	...	...	5	...	5	...	...	...	...	...	...	...	
Cut Throat	1	...	5	3	5	3	...	...	1	...	...	...	All suicidal.
Foreign Bodies in the Œsophagus	...	...	...	1	...	1	...	...	...	...	..	..	A set of false teeth was extracted.
Injuries of the Chest.													
Contusion	...	2	13	7	13	9	...	...	...	...	...	...	In one, a female, aged 38, hæmoptysis occurred.
Fractured Ribs, Lung not Wounded	2	...	20	2	19	2	...	...	...	...	3	...	Several also had chronic bronchitis and emphysema. One, aged 46, had dislocation of the humerus into axilla; was reduced.
Do., Lung Wounded	...	...	6	...	3	...	...	...	2	...	1	...	In both cases of death, hæmorrhage into the pleura and rupture of lung had taken place. One had hæmoptysis and three had emphysema.
Injuries of the Back.													
Contusion	...	1	30	3	27	4	...	...	1	...	2	...	In one, a male, aged 69, tetanus followed after the blow; death.
Wound	1	...	8	1	9	1	...	...	...	...	...	...	Several caused by stabs.
Fracture of the Spine	...	...	5	2	...	1	...	...	5	1	...	...	In the female that recovered one of the spinous processes in the dorsal region was fractured. In cervical region 3; death in 2 in three days, one on the 17th day. In dorsal region one; death within 5 weeks. In lumbar region two. Death within 24 hours one, the other within a month.

DISEASES.	No. of surgical cases in the hospital at the beginning of 1871.		No. of surgical cases admitted during 1871.		Discharged cured or relieved.		Discharged unrelieved.		Died.		Remaining at the end of year 1871.		Nature of complications, &c.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
LOCAL INJURIES (*continued*).													
Injuries of the Back—													
Injury of the Spine, without known Fracture	...	...	6	...	6	...	...	...	...	...	...	...	In one, aged 18, was followed by local hyperæsthesia and anæsthesia.
Injuries of the Abdomen.													
Contusion	...	...	13	5	12	5	...	...	1	...	...	...	A death occurred within four hours of admission, probably due to rupture of the liver. No post-mortem, however, was made. Extreme collapse followed in 4. In one, a male, aged 12, peritonitis occurred, but he recovered.
Do., with Rupture of Viscera.....	...	...	6	...	...	...	...	...	6	...	...	...	Of liver 3, of kidney one, of bladder one, of intestine one.
Wound of the Parietes...	...	...	3	...	3	...	...	...	...	...	...	...	In two ligature of the epigastric artery was necessary.
Injuries of the Pelvis.													
Contusion	...	...	9	1	9	1	...	...	...	...	...	...	One, aged 35, a male, had hæmaturia for some days.
Wound of the Male Perineum, Scrotum, and Penis	...	...	4	...	3	...	...	...	1	...	...	...	One male, aged 36, had lacerated perinæum, extravasation of urine, delirium tremens; death.
Wound of Female Perinæum and Vulva...	...	...	...	6	...	5	...	...	...	1	...	...	The death was from hæmorrhage, abortion having taken place after the injury.
Fracture of the Pelvis...	1	...	1	...	2	...	...	...	...	...	...	...	Fracture of the crest of ilium in one aged 39.
Fracture of Coccyx	...	1	...	1	...	2	...	...	...	...	...	...	
Injuries of the Upper Extremity.													
Contusion	...	...	3	2	3	2	...	...	...	...	...	...	

DISEASES.	No. of surgical cases in the hospital at the beginning of 1871.		No. of surgical cases admitted during 1871.		Discharged cured or relieved.		Discharged unrelieved.		Died.		Remaining at the end of year 1871.		Nature of complications, &c.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
LOCAL INJURIES (*continued*).													
Injuries of the Upper Extremity—													
Wound—													
Of Arm	1	...	5	2	5	2	...	...	1	...	...	...	One, aged 51, a male, died of pyæmia. In two, aged 15 and 13, profuse hæmorrhage occurred. In one, aged 22, the injury was so severe that primary amputation in the upper third was performed; he had recurrent hæmorrhage. One, a female, aged 30, had extensive cellulitis.
Of Forearm	2	...	4	2	5	2	...	...	...	...	1	...	In one, a female, aged 26, hæmorrhage was so severe that ligature of the radial was necessary. In the case of a male, aged 33, amputation was performed last year, owing to extensive sloughing having taken pl ce. In a male, aged 26, the parts were so lacerated that amputation in the upper third of arm was performed; still in.
Of elbow	...	...	...	1	...	1	...	...	...	...	...	...	
Of hand	...	...	34	5	31	5	...	...	1	...	2	...	The male, aged 8 years, died of tetanus; had a lacerated wound of middle and ring finger of right hand 11 days prior to admission. In one primary amputation was performed through carpus; in two through metacarpus; 16 of fingers; two secondary of fingers.
Gunshot	1	...	1	...	2	...	...	...	...	...	...	...	In the case aged 30, of forearm; the wound was superficial and caused by small shot. In the other case the bullet passed through the palm.
Injuries of Vessels	...	1	3	1	2	2	...	...	...	...	1	...	Four of radial, one of ulnar; all ligatured.
Fracture of the Clavicle.	...	...	4	4	4	4	...	...	...	...	...	...	
Do. Scapula	...	...	1	...	1	...	...	...	...	...	...	...	
Do. Humerus—													
Simple	1	...	13	...	12	...	...	...	1	...	1	...	One, aged 64, had chronic bronchitis and died of exhaustion. 10 of shaft; 2 of neck; one of internal condyle. Three also had fractured ribs; one had fracture of radius and ulna, and one of radius alone.

DISEASES.	No. of surgical cases in the hospital at the beginning of 1871.		No. of surgical cases admitted during 1871.		Discharged cured or relieved.		Discharged unrelieved.		Died.		Remaining at the end of year 1871.		Nature of complications, &c.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Local Injuries (*continued*).													
Injuries of the Upper Extremities—													
Fracture of Humerus—													
Comminuted	...	...	2	...	2	...	...	...	...	...	...	...	One, aged 13, had also an extensive scalp wound.
Compound	1	...	1	...	2	...	...	...	...	...	...	...	
Do., Simple, of—													
Forearm	1	...	7	2	8	2	...	...	...	...	...	...	One, aged 30, had also contusion of spine, paralysis of lower extremities; was remaining in from last year; recovered. 6 of radius; 3 of radius and ulna. Several had also lacerated wounds of scalp.
Do., Compound, of—													
Radius and Ulna	...	...	2	...	2	...	...	...	...	...	...	...	In one, aged 16, fracture was so severe that primary amputation of forearm in lower third was performed.
Sternum	...	...	1	...	1	...	...	...	...	...	...	...	
Dislocation of Sterno-clavicular Joint	...	...	1	...	1	...	...	...	...	...	...	...	
Do. of Shoulder	1	...	3	1	2	1	1	...	...	...	1	...	Four into axilla, one forwards. In the case of failure two attempts were made. The dislocation had existed three months. In the case of the female paralysis of arm followed the reduction.
Do. of Acromial End of Clavicle	...	...	1	...	1	...	...	...	...	...	...	...	This case had also fracture of the fibula.
Do. of Thumb	...	...	1	...	1	...	...	...	...	...	...	...	
Injuries of the Lower Extremities.													
Contusions	3	1	52	21	52	22	...	...	...	...	3	...	
Sprain	3	...	22	7	22	7	...	...	...	...	3	...	
Wounds—													
Of thigh	...	...	6	1	5	1	...	...	...	...	1	...	In one, a male, aged 33, the external circumflex artery was wounded, and had to be ligatured.
Over Knee	1	...	8	2	9	2	...	...	...	...	...	...	One, a male, aged 43, had intercurrent rheumatism. Two had diffuse cellulitis following. In one the bursa patellæ was lacerated, cellulitis followed.

DISEASES.	No. of surgical cases in the hospital at the beginning of 1871.		No of surgical cases admitted during 1871.		Discharged cured or relieved.		Discharged unrelieved.		Died.		Remaining at the end of year 1871.		Nature of complications, &c.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
LOCAL INJURIES (*continued*).													
Injuries of the Lower Extremities—													
Wounds—													
Of Leg	...	...	4	4	4	4	...	...	...	...	...	...	In a male, aged 37, the anterior tibial artery was divided, and had to be ligatured. In a boy, aged 7, the tendo Achillis was severed. One male, aged 49, had diffuse cellulitis following.
Of Foot	1	...	17	...	17	...	...	...	...	...	1	...	In a boy, aged 13, whose foot was severely crushed, primary amputation of the leg in the lower fourth had to be done. A man, aged 18, had traumatic gangrene of part of the foot following severe crushing. In two cases there was diffuse cellulitis.
Of Knee-joint	...	...	3	1	1	1	...	...	...	...	2	...	A girl, aged 13, wounded her knee-joint with a crochet needle. Two were punctured with sewing needles, and one with a nail. All had acute synovitis, but ultimately did well.
Of Ankle-joint	...	...	1	...	1	...	...	...	...	...	...	...	In a man, aged 30, severe laceration of the ankle-joint. An attempt was made to save the foot, but secondary amputation of the leg had to be performed, after which he made a good recovery.
Fracture of the Femur—													
Simple	9	...	34	24	36	21	...	...	1	...	6	3	Among females, one, aged 50, had fracture of the patella also. One, aged 6, had fractures of both femora, with severe contusions. One, aged 11, had fracture also of the tibia. Among males, one, aged 69, had chronic albuminuria, and died with uræmic convulsions six weeks after admission. One, aged 48, had acute pneumonia; one, aged 13, had fracture also of the tibia. A boy, aged 9, was admitted with badly united fracture, which had to be re-fractured; when discharged, there was no shortening of the limb. In two cases there was acute synovitis of the knee. In a boy, aged 9, a large abscess formed about the seat of fracture.

DISEASES.	No. of surgical cases in the hospital at the beginning of 1871.		No. of surgical cases admitted during 1871.		Discharged cured or relieved.		Discharged Unrelieved.		Died.		Remaining at the end of year 1871.		Nature of complications, &c.
	M.	F.	M.	F.	M.	F.	M	F	M	F.	M.	F.	
Local Injuries (*continued*).													
Injuries of the Lower Extremities—													
Fracture of the Femur—													
Comminuted	1	...	1	1	2	...	...	...	...	...	...	1	
Compound	...	...	2	1	1	1	...	...	1	...	...	...	One female, aged 30, had fracture into the knee-joint, for which secondary amputation of the thigh was performed. One male, aged 74, had fractures also of the right humerus and of both tibiæ and fibulæ; he died the same day.
Fracture of the Cervix Femoris	1	1	4	8	2	5	...	...	2	1	1	3	In one male, aged 72, and in two females, aged 64 and 70, no union had taken place.
Do. Patella	3	...	13	6	14	4	...	...	...	...	2	2	All transverse. Two males had delirium tremens.
Comminuted	...	...	1	...	1	...	...	...	...	...	...	...	In a male, aged 19; he had also fracture of clavicle and lacerated wounds of scalp and knee.
Do. both Bones of the Leg—													
Simple	9	4	104	39	97	36	...	...	3	...	13	7	Among females, one, aged 36, had fracture also of clavicle; one, aged 18, had chronic disease of the knee-joint on the same side. Among males, one, aged 25, had severe internal abdominal injuries and died the same day. One, aged 76, lived seven days and died of exhaustion. Another, aged 55, had severe contusions and died in seven days. One, aged 30, had intercurrent typhoid fever and recovered. One, aged 16, had intercurrent smallpox and recovered. In one, aged 38, a projecting spicula of bone was removed by operation. One, aged 33, had chronic rheumatic disease of the knee-joint. One, aged 44, had concussion of the brain. One, aged 28, had severely contused arm, followed by axillary abscess.
Comminuted ...	3	...	5	1	6	1	...	...	1	...	1	...	A male, aged 42, was admitted in a state of intoxication; the next day he had delirium tremens, and died exhausted two days afterwards.

DISEASES.	No. of surgical cases in the hospital at the beginning of 1871.		No. of surgical cases admitted during 1871.		Discharged cured or relieved.		Discharged Unrelieved.		Died.		Remaining at the end of 1871.		Nature of complications, &c.
	M.	F.	M.	F.	M.	F.	M.	F.	M	F.	M.	F.	
LOCAL INJURIES (*continued*).													
Injuries of the Lower Extremities—													
Fracture of both bones of the Leg— Compound	4	1	13	3	11	3	...	...	4	...	2	1	Among females, one, aged 13, had compound fracture extending into knee-joint; she made a good recovery. Among males, one, aged 56, had secondary amputation of the leg in the upper third performed on the tenth day, and recovered. In one, aged 62, the fracture was severely comminuted. One, aged 33, had compound fracture of both legs in a railway accident, and died shortly after admission. One, aged 65, died of exhaustion three days after admission. In one, aged 58, primary amputation was performed, followed by death from exhaustion in six days. A child, aged 5, was admitted with severe compound fracture of the leg, with crushing and laceration of the foot. An attempt was made to save the limb. Traumatic gangrene of the great toe set in, followed by tetanus. Secondary amputation of the leg was performed; the symptoms of tetanus disappeared for a time, but recurred after a few hours, and the patient died eight days after admission.
Fracture of Tibia alone— Simple	3	1	4	...	7	1	...	...	...	...	...	...	In a male, aged 33, necrosis of tibia followed, and several portions of dead bone were removed.
Compound	...	...	2	1	2	1	...	...	...	...	...	...	In a boy, aged 13, a large abscess formed about the seat of fracture. A drayman, aged 33, had severe scalp wound and delirium tremens.

DISEASES.	No. of surgical cases in the hospital at the beginning of 1871.		No. of surgical cases admitted during 1871.		Discharged cured or relieved.		Discharged unrelieved.		Died.		Remaining at the end of 1871.		Names of complications, &c.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
LOCAL INJURIES (*continued*).													
Injuries of the Lower Extremities—													
Fracture of Fibula alone Simple	6	1	43	19	43	19	...	...	3	...	3	1	Among males, a boy, aged 14, had intercurrent smallpox and was removed from the hospital. Two, aged respectively 37 and 41, died with delirium tremens three days after admission. One, aged 15, had advanced phthisis and died five days after admission.
Do. of Bones of the Foot	...	...	1	...	1	...	...	...	...	...	...	...	Primary amputation of toes. Erysipelas of leg on the fifth day.
Ununited Fracture	...	...	3	...	...	...	2	...	1	...	...	...	Two of femur. One, aged 37, fracture in the lower third; operation; ends of bone removed; died on the fourth day after operation. One of leg.
Dislocation of the Knee .	...	...	3	...	...	...	...	...	...	...	3	...	In one, aged 39, fracture of the head of tibia was also present.
Do. of the Foot at Ankle	...	...	1	...	...	...	...	...	...	...	1	...	Dislocation of the astragalus; reduced.
Human Parasites— Echinococcus hominis	...	...	2	1	1	1	...	...	1	...	...	...	One, a male, aged 23, situated in the cellular tissue behind the prostate; produced retention. Death, however, was the result of acute erysipelas of face. In the other male the cyst was over the biceps muscle, in the female at the back of the neck; both laid open by incision.
Injuries not Classified.													
Rupture of Muscle [1]	...	...	3	2	2	2	...	...	...	...	1	...	Several of rectus of the thigh.
Congenital Malformation	...	...	1	1	...	...	...	1	...	..	1	...	In the case of the female congenital webbing of the second and third fingers. In the male deformity of the second toe; amputation was performed.
Unclassified Cases	14	2	32	16	31	5	...	...	...	...	15	13	Several were admitted for artificial limbs after amputation.

ABSTRACT OF TABLE I.

No. of Patients in Surgical Wards at beginning of 1871.		No. of Patients admitted during 1871.		Discharged cured or relieved.		Discharged unrelieved.		Died.		Remaining in at the end of year 1871.	
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
185	130	2053	1449	1857	1344	66	33	127	62	185	143
315		3502		3201		99		189		328	
3817				3817							

TABLE II.

Complete Cases of the Year, according to Diseases and Ages.

DISEASES.	Under 5 yrs.		5–10.		10–15.		15–25.		25–35.		35–45.		45–55.		55–65.		65–75.		Total.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
General Diseases, A.—																				
Phagedæna	...	1	...	...	...	...	1	...	...	1	1	2	1	1	...	...	...	...	3	5
Erysipelas—																				
a. Simple	...	1	...	...	...	...	2	...	4	2	1	...	2	2	...	...	1	...	10	5
b. Phlegmonous	...	...	...	...	...	...	1	1	1	...	1	2	2	1	...	...	...	1	5	5
c. Diffuse Inflammation	...	1	2	...	...	2	5	9	13	4	8	6	8	6	2	1	2	1	40	30
Pyæmia	...	...	1	...	...	...	2	1	...	1	...	...	1	...	...	...	...	...	4	2
General Diseases, B.—																				
Gonorrhœal Rheumatism	...	...	...	...	...	...	2	1	...	...	...	...	...	...	...	...	...	...	2	1
Syphilis—																				
A. Primary Syphilis—																				
Hard Chancre	...	...	...	...	...	...	42	22	5	3	4	...	...	...	...	...	...	...	51	25
Indurated Bubo	...	...	...	...	...	...	5	2	...	...	...	...	...	...	...	...	...	...	5	2
Soft Chancre	...	...	...	...	...	...	29	34	11	10	1	...	...	2	...	...	...	...	41	46
Phagedænic Sore	...	...	...	...	...	...	16	9	8	2	2	...	...	...	...	...	...	...	26	11
B. Hereditary Syphilis	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
C. Secondary Syphilis																				
I. Local Syphilitic Affections—																				
Face	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	1	1
Nose	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	1	1
Larynx	...	...	...	...	...	...	...	1	3	...	...	...	...	...	...	...	...	...	3	1
Tongue	...	...	...	...	...	...	1	1	1	1	...	1	...	...	...	...	...	...	2	3
Muscle	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...
Pharynx	...	...	...	...	...	...	1	5	2	...	1	1	2	...	...	...	...	...	6	6
Rectum	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...
Anus	...	...	...	...	...	...	...	...	...	1	...	2	...	1	...	...	...	...	...	4
Penis	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	2	...
Testicle	...	...	...	...	...	...	1	...	1	...	2	...	1	...	...	...	...	...	5	...
Bone	...	...	...	...	...	...	1	...	5	3	1	...	...	...	...	...	...	...	7	3
Skin	...	...	...	...	...	...	15	111	16	10	5	2	7	3	...	1	...	...	43	127
Mammæ	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1
Muscle	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...
Cancer—																				
A. Scirrhus—																				
Œsophagus	...	...	...	...	...	...	...	...	...	...	1	...	...	1	2	...	...	...	3	1
Rectum	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	2	...
Female Breast	...	...	...	...	...	...	...	...	...	...	...	11	...	8	...	6	...	1	...	26
Lymphatic Glands	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1
B. Medullary Cancer—																				
Lymphatic Glands	...	...	...	...	...	...	...	...	...	1	...	1	1	1	...	1	...	...	1	4

DISEASES.	Under 5 yrs.		5–10.		10–15.		15–25.		25–35.		35–45.		45–55.		55–65.		65–75.		TOTAL.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
GENERAL DISEASES, B (*continued*).																				
Cancer—																				
Medullary Cancer—																				
Jaws	...	...	...	...	...	...	1	...	...	...	...	1	...	...	1	...	...	...	2	1
Testicle	...	...	...	...	...	...	...	...	2	...	1	...	1	...	1	...	...	...	5	...
Female Breast	...	...	...	...	...	...	...	...	...	...	...	1	...	2	...	1	...	...	...	4
Bone	...	...	...	...	2	1	1	2	...	...	2	...	1	...	...	...	...	...	6	3
Uterus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Bladder	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...
Rectum	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	1	2	1
c. Epithelial Cancer—																				
Lymphatic Glands	...	...	...	...	...	...	...	...	...	...	...	1	..	...	...	...	...	...	...	1
Face	...	...	...	...	...	...	...	...	...	...	...	...	1	...	3	1	1	...	5	1
Lips	...	...	...	...	...	...	...	...	...	...	...	...	.	...	1	1	1	...	2	1
Palate and Gums	...	...	...	...	...	...	...	...	...	...	2	...	2	...	...	...	1	...	5	...
Tongue	...	...	...	...	...	...	...	...	1	...	2	2	2	...	3	...	2	...	10	2
Penis	...	...	...	...	...	...	...	...	...	...	1	...	...	...	3	...	...	...	4	...
Uterus	...	...	...	...	...	...	..	1	...	...	...	...	...	...	...	...	...	...	...	1
Skin	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	1	...	...	2	1
D. Melanotic—																				
Skin	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Breast	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	2
Scrofula—																				
Eye	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	1
Lymphatic Glands	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
Testicle	...	...	...	...	1	...	2	...	1	...	2	...	3	...	1	...	...	...	10	...
Female Breast	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
Bone	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2
Joints	1	4	11	9	...	5	3	3	5	3	1	...	1	..	...	...	...	...	22	24
Cellular Tissue	...	...	1	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	2	1
Skin	...	...	...	1	...	1	...	...	1	...	...	...	...	...	...	...	...	...	1	2
Chronic Rheumatic Arthritis	...	...	...	...	...	...	...	...	...	...	1	...	2	1	...	1	...	...	3	2
DISEASES OF THE NERVOUS SYSTEM.																				
Neuralgia	...	...	...	...	...	...	...	1	...	...	1	...	...	...	1	...	...	...	2	1
Lupus	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1
DISEASES OF THE EYE.																				
Conjunctivitis	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1
Catarrhal Ophthalmia	...	2	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	4
Rheumatic do.	...	...	...	...	...	...	1	1	1	1	...	...	1	...	...	...	...	...	3	3
Gonnorrhœal do.	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	2	...
Keratitis	...	...	1	1	...	4	...	7	3	...	...	1	3	...	...	...	...	...	7	13
Ulcer of Cornea	...	1	...	1	1	...	1	4	...	...	1	...	...	1	1	...	...	...	4	7

DISEASES.	Under 5 yrs.		5–10.		10–15.		15–25.		25–35.		35–45.		45–55.		55–65.		65–75.		Total.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Diseases of the Eye (*continued*).																				
Opacity of Cornea	2	2	1	3	1	2	1	2	2	...	1	...	2	1	...	2	...	...	10	12
Staphyloma	...	3	1	1	...	...	...	1	...	...	...	...	...	...	...	...	...	1	1	6
Iritis	...	...	...	...	...	...	3	...	2	1	...	3	1	...	...	...	...	...	6	4
Choroido-retinits	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...
Retinitis	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	2	...
Amaurosis	...	...	2	...	...	...	1	...	1	...	1	...	...	...	1	...	...	...	6	...
Cataract	...	2	...	1	1	1	1	...	2	1	4	...	1	1	3	2	3	...	15	8
Glaucoma	...	...	...	...	...	...	...	...	...	...	1	...	1	3	...	3	...	2	2	8
Total Disorganisation of Eyeball	...	...	...	...	...	1	...	3	...	1	...	...	...	...	...	...	...	...	...	5
Synechia	...	...	...	...	...	...	3	...	1	...	...	...	1	...	2	...	...	...	7	...
Ectropion	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1
Trichiasis and Entropion	...	...	...	...	...	...	...	1	...	1	...	2	...	...	...	...	...	...	...	4
Strabismus	...	3	1	3	1	1	3	4	...	...	...	...	...	...	...	...	...	...	5	11
Lachrymal Fistula	...	...	...	...	...	1	...	1	...	...	...	2	...	...	...	...	...	...	...	4
Other Diseases	...	1	...	...	...	...	...	...	2	1	...	...	2	...	2	...	...	...	6	2
Diseases of the Ear.																				
Polypus	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
Rupture Membrana Tympani	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	2	...
Foreign body in Ear	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	2
Diseases of Nose.																				
Epistaxis	...	...	...	...	...	...	...	...	1	1	...	...	...	1	...	1	...	2	1	5
Polypus	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	1	1
Fibro-cellular Tumour	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
Cartilaginous Tumour	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Diseases of the Circulatory System.																				
Aneurism—																				
b. Sacculated—																				
Thoracic Aorta	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...
Subclavian Artery	...	...	...	...	...	...	...	...	1	..	1	..	...	...	...	...	...	...	2	...
Gluteal	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	..	...	...	1	...
Popliteal	...	...	...	...	...	...	...	...	3	...	...	...	1	...	1	...	...	...	5	...
Phlebitis	...	...	...	...	1	...	...	...	...	2	2	...	...	...	...	...	...	...	3	2
Varicose Veins	..	...	...	...	...	...	...	...	3	2	...	4	1	2	...	...	...	...	4	8
Varicocele	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
Inflamed Lymphatics	1	1	...	...	...	1	1	...	1	1	...	...	...	...	...	...	...	...	3	3
Do. Glands	...	...	...	...	...	...	3	3	2	1	2	1	1	...	...	...	...	...	8	5
Suppuration of Glands	...	...	...	...	1	...	8	5	5	2	...	2	...	...	...	...	...	...	13	10
Obstruction of Lymphatics	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...
Abscess	...	...	...	...	...	...	1	2	...	...	...	...	...	...	...	...	...	...	1	2

DISEASES.	Under 5 yrs.		5–10.		10–15.		15–25.		25–35.		35–45.		45–55.		55–65.		65–75.		TOTAL.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
DISEASES OF THE LIPS.																				
Malformations—																				
a. Single Hare Lip	4	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	3
b. Double Do.	3	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	3
Abscess of the Cheek	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...
DISEASES OF THE MOUTH.																				
Cancrum Oris	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
DISEASES OF THE JAWS, including the *Antrum*.																				
Fibrous Tumour	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	1	1
Osseous Tumour	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Abscess of Antrum	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...
DISEASES OF THE GUMS.																				
Epulis	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1
Abscess	...	...	...	...	...	...	2	1	...	2	...	...	...	...	...	...	...	...	2	3
DISEASES OF THE TONGUE.																				
Abscess	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	..	...	...	1	...
Ranula	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	2	...
DISEASES OF FAUCES AND PALATE.																				
Enlarged Tonsils	...	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...
Malformations—																				
A. Cleft Palate	...	1	...	3	...	1	1	3	...	...	...	...	...	...	...	...	...	...	1	8
DISEASES OF SALIVARY GLANDS.																				
Inflammation	...	...	...	...	...	...	1	...	1	1	...	...	...	...	...	...	...	...	2	1
Abscess	...	...	...	...	...	...	...	...	..	1	...	...	...	...	...	...	...	...	...	1
Parotid Granular Tumour	...	...	...	.	...	...	...	...	...	...	1	2	...	...	...	...	...	...	1	2
Cystic	..	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...

DISEASES.	Under 5 yrs.		5–10.		10–15.		15–25.		25–35.		35–45.		45–55.		55–65.		65–75.		Total.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Diseases of the Œsophagus.																				
Stricture	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	2	...
Diseases of the Intestines.																				
Hernia—																				
Umbilical	...	...	...	...	...	...	...	...	...	..	...	1	...	2	1	1	...	1	1	5
Inguinal	...	...	1	...	1	..	6	...	7	...	6	1	5	...	5	1	3	1	34	3
Ventral	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	..	1	1
Femoral	...	...	...	...	...	...	...	...	...	...	...	4	...	6	...	5	...	1	...	16
Diseases of Rectum and Anus.																				
Fistula in Ano	...	...	...	...	...	..	4	4	3	4	5	1	4	...	...	...	2	...	18	9
Hæmorrhoids	...	...	...	...	...	.	...	...	1	4	3	2	6	...	...	...	...	...	10	6
Fissure of the Anus	...	...	...	...	...	...	...	1	...	1	1	...	2	...	...	...	...	...	3	2
Prolapsus	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	1
Stricture	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	1
Lupus of Anus	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	1	1
Intestinal Obstruction	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2	...	...	...	3
Diseases of the Urinary System.																				
Cystic Disease of Kidney	...	...	...	...	...	...	1	...	...	...	...	1	...	...	3	...	2	...	6	1
Cystitis	1	...	3	...	2	...	...	1	...	...	...	...	...	...	...	...	...	...	6	1
Calculus	1	1	4	...	2	...	1	...	...	...	...	...	...	...	1	...	...	...	9	1
Diseases of Prostate Gland.																				
Inflamed Prostate	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	2	...
Enlarged „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	7	...	10	..
Gonorrhœa and its Complications.																				
Gonorrhœa	...	...	...	...	...	...	11	183	7	12	1	4	2	1	...	...	...	...	21	200
Balanitis	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
Phimosis	...	...	...	...	...	...	18	...	4	...	2	...	...	...	...	...	...	...	24	...
Paraphimosis	...	...	...	...	...	...	3	...	1	...	...	...	...	...	...	...	...	...	4	...
Bubo	...	...	...	...	...	...	15	29	...	1	...	...	...	...	...	...	...	...	15	30
Lacunar Abscess	...	...	...	...	...	...	1	...	2	...	...	...	...	...	...	...	...	...	3	...
Epididymitis	...	...	...	...	...	...	10	...	1	...	...	...	...	...	...	...	...	...	11	...
Warts	...	...	...	...	...	...	3	15	...	...	...	1	...	...	...	...	...	...	3	16
Abscess in Vulva	...	...	...	...	...	...	...	5	...	2	...	...	...	...	...	...	...	...	...	7

DISEASES.	Under 5 yrs.		5–10.		10–15.		15–25.		25–35.		35–45.		45–55.		55–65.		65–75.		TOTAL.	
	M.	F.	M.	F.	M.	F	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
DISEASES OF THE URINARY SYSTEM (*continued*).																				
Diseases of Male Urethra.																				
Stricture—																				
a. Organic	...	...	1	...	...	...	4	...	10	...	11	...	8	...	7	...	1	...	42	...
c. Spasmodic	...	...	...	...	...	...	2	...	4	..	...	...	1	...	...	...	...	...	7	...
d. Inflammatory	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	2	...
Urinary Abscess	...	...	...	...	...	...	...	...	4	...	1	...	...	..	...	...	...	...	5	...
Fistula	...	...	1	..	...	.	...	...	2	...	6	...	3	...	1	...	...	...	13	...
Extravasation of Urine	...	...	...	...	...	.	...	...	...	...	5	...	2	...	1	...	..	...	8	...
Impacted Calculus	...	...	...	...	...	...	1	...	...	...	...	...	...	..	...	...	...	...	1	...
Diseases of the Penis and Testis.																				
Malformation—																				
a. Phimosis	4	...	2	...	.	...	6	...	...	..	1	...	...	...	...	...	1	...	14	...
Hydrocele of Tunica Vaginalis	...	...	...	...	1	...	5	...	2	...	3	...	5	...	2	...	...	...	18	...
Acute Orchitis	...	...	...	...	1	...	1	...	...	...	1	...	...	...	...	...	...	...	3	...
DISEASES OF FEMALE ORGANS OF GENERATION.																				
Diseases of the Ovary	...	...	...	...	...	...	...	2	...	2	...	5	...	2	...	3	...	...	...	14
Diseases of the Uterus.																				
Non-Malignant Tumour—																				
b. Polypus	...	...	..	...	...	...	...	...	...	...	...	3	...	1	...	...	...	..	...	4
Diseases of the Vagina.																				
Recto-Vaginal Fistula	...	...	..	...	...	..	...	1	..	...	...	...	...	...	...	...	...	...	...	1
Vesico-Vaginal Fistula	...	...	...	...	...	...	...	5	...	...	..	1	...	2	...	...	...	...	...	8
Polypus	...	...	...	...	...	...	..	...	...	1	...	...	...	...	...	...	...	...	...	1
FUNCTIONAL DISEASES OF THE FEMALE ORGANS OF GENERATION.																				
Diseases of Vulva.																				
Nœvus of Labia	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Abscess	...	...	.	...	...	...	...	4	...	1	...	...	...	...	...	...	...	...	..	5
Hypertrophy	...	...	...	...	...	...	...	2	...	1	...	...	...	...	...	...	...	..	..	3
Imperforate Hymen	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1

DISEASES.	Under 5 yrs.		5–10.		10–15.		15–25.		25–35.		35–45.		45–55.		55–65.		65–75.		Total.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Functional Diseases of the Female Organs of Generation (*continued.*)																				
Diseases of Vulva																				
Vascular Tumour of Meatus Urinarius	...	...	...	...	...	...	...	...	...	...	...	2	...	1	...	4	...	...	...	7
Dysmenorrhœa	...	...	...	...	...	...	...	...	...	5	...	1	...	...	...	...	...	...	...	6
Mechanical obstruction to the action of Uterus	...	...	..	..	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1
Cystic Tumour of Labia	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	2
Fibro-cellular Tumour of Labia	...	...	...	...	...	..	...	...	...	1	...	...	...	...	...	...	...	...	...	1
Warty Growth of Labia	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Ruptured Perinæum	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	..	...	...	2
Diseases of the Female Breast.																				
Inflammation	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	2
Abscess	...	...	...	...	...	...	...	1	...	...	...	2	...	1	...	...	...	...	...	4
Non-Malignant Tumours *f.* Chronic Mammary.	...	...	...	.	...	...	...	3	...	3	...	...	...	...	...	1	...	...	...	7
Comp. Cystic Tumour	...	...	...	..	...	...	...	...	...	1	...	2	...	1	...	...	...	...	...	4
Diseases of the Organs of Locomotion.																				
Diseases of Bones.																				
Ostitis	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...
Periostitis	...	...	1	.	...	...	...	6	3	1	2	...	1	1	...	...	...	...	7	8
a. Acute Necrosis	1	...	1	3	1	1	1	1	2	...	1	1	...	...	...	...	...	...	7	6
Chronic Abscess	...	...	...	...	1	...	...	...	...	...	...	1	...	1	...	...	..	...	1	2
Caries	...	1	...	...	6	2	7	2	2	1	4	2	1	1	...	...	...	...	20	9
Necrosis	...	...	5	5	2	2	12	9	8	7	8	4	8	1	3	1	...	1	46	30
Non-Malignant Tumours	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
b. Myeloid	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
c. Cartilaginous	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
d. Osseous (*Cancellated*)	...	...	1	...	1	..	6	...	...	...	...	..	...	...	...	...	...	...	8	...
Diseases of the Joints.																				
Acute Synovitis	...	...	3	...	8	3	13	9	6	8	2	4	4	2	3	2	1	2	40	30
Chronic do.	3	1	3	1	2	4	5	13	2	3	4	4	2	1	2	...	...	...	23	27
Ulceration of Cartilage	1	...	1	2	1	4	6	1	3	1	1	...	2	...	...	...	...	...	15	8
Abscess	1	2	...	1	1	1	2	1	...	...	1	...	...	...	...	...	...	...	5	5
Ankylosis (Fibrous)	...	...	1	...	1	...	1	...	...	...	...	...	1	...	...	...	...	...	4	...
a. Deformity from Ankylosis	...	...	1	1	...	...	1	...	...	...	1	...	...	...	...	...	...	...	3	1

DISEASES.	Under 5 yrs.		5–10.		10–15.		15–25.		25–35.		35–45.		45–55.		55–65.		65–75.		Total.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Diseases of the Organs of Locomotion (*continued*).																				
Diseases of the Joints.																				
Loose Cartilage	...	...	...	...	...	...	...	...	...	1	...	1	1	...	...	...	...	...	1	2
Perforation of Joints	...	...	...	..	...	...	1	1	...	...	...	...	...	...	...	...	...	...	1	1
Knock-Knee	...	..	...	...	...	2	3	1	...	...	...	...	...	...	...	...	...	...	3	3
Diseases of the Spine.																				
Ulceration of Ligaments and Cartilage	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	1	1
Psoas, Lumbar, and other Abscesses	2	...	4	...	1	...	6	...	3	1	...	1	...	...	1	1	...	...	17	3
Contraction of Tendons, Fasciæ, or Muscles	...	...	1	1	...	1	1	1	2	1	1	...	...	...	1	...	...	. .	6	4
Angular Deformity	1	1	2	...	1	...	3	2	3	...	1	...	...	...	...	...	...	...	11	3
Lateral Curvature	...	...	...	...	..	3	...	1	1	1	...	...	...	...	...	...	...	...	1	5
Diseases of Muscles.																				
Abscess	...	.	...	...	...	1	...	2	...	1	...	1	...	...	...	...	...	...	...	5
Club-foot—																				
a. Talipes Varus	3	5	4	5	...	...	1	...	...	...	...	...	...	...	...	...	...	...	8	10
b. Do. Valgus	...	...	...	...	...	...	1	2	...	...	...	...	...	...	...	...	...	...	1	2
c. Do. Equinus	1	..	5	2	1	1	1	...	1	...	1	...	...	...	...	...	...	...	10	3
f. Equino-Valgus	...	...	..	...	...	1	2	...	1	..	...	...	...	...	...	...	...	...	3	1
Wry-Neck	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	2
Enlarged Bursa Patellæ	...	...	1	...	1	2	5	36	4	9	2	3	3	...	...	...	1	...	17	50
Enlargement of other Bursæ	...	...	...	...	...	...	1	...	...	1	2	...	2	...	2	...	...	...	7	1
Bursal Tumour	...	...	...	...	...	...	...	...	1	1	1	...	...	...	...	...	...	...	2	1
Diseases of the Cellular Tissue.																				
Inflammation	...	...	...	...	1	1	1	...	1	...	2	...	3	1	1	...	...	...	9	2
Abscess	2	4	6	2	7	1	16	11	16	10	15	12	17	3	3	3	...	...	92	36
Slough	...	...	...	...	...	...	1	...	2	...	...	...	2	...	...	...	...	...	5	...
Non-Malignant Tumours																				
Fibro-cellular do.	1	...	...	...	1	...	...	...	...	...	...	1	1	...	...	...	...	...	3	1
Fatty do.	...	...	...	...	...	...	...	2	...	2	...	3	1	2	1	...	...	1	2	10
Recurrent Fibroid	...	...	...	...	...	...	1	1	...	...	...	...	2	...	3	...	...	...	6	1
Serous Cysts	...	...	...	...	...	1	...	...	...	...	1	...	...	..	...	...	...	...	1	1
Hæmorrhagic do.	...	...	...	...	...	...	...	...	...	1	...	...	1	1	...	...	...	...	1	2
Dermoid do.	...	1	2	1	...	...	...	2	...	1	...	1	1	...	...	...	...	...	3	6

DISEASES.	Under 5 yrs.		5–10.		10–15.		15–25.		25–35.		35–45.		45–55.		55–65.		65–75.		Total.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Diseases of the Cutaneous System.																				
Erythema Nodosum	...	...	...	...	..	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
Eczema	...	1	1	...	1	..	1	2	...	2	3	...	1	1	...	...	...	...	7	6
Lepra	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	1	1
Impetigo	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Ecthyma	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...
Ulcer	...	...	...	2	2	3	1	4	14	8	15	7	8	4	8	4	2	3	50	35
Boils	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...
Carbuncle	...	...	...	...	...	...	1	...	...	...	3	1	4	1	2	...	2	1	12	3
Onychia	...	...	2	...	...	1	1	...	...	1	...	...	...	...	...	...	...	...	3	2
Molluscum	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...
Whitlow—																				
a. Thecal Abscess	...	...	...	...	...	...	...	...	...	1	...	...	2	...	1	...	...	...	3	1
Gangrene	...	...	...	...	...	...	1	1	...	...	...	...	2	...	...	...	1	...	4	1
Mole	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	1	1
Nævus	1	6	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	7
Warts	...	...	...	...	1	...	4	9	...	...	...	...	1	...	...	...	...	...	6	9
In-growing Toe Nail	...	...	...	...	...	...	2	4	...	1	...	...	...	...	...	...	...	...	2	5
Poisoned Wounds	...	...	...	...	1	...	1	1	...	...	...	..	...	2	...	...	...	...	2	3
Rodent Ulcer	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	1	3	...	3	3
Cheloid	...	...	...	...	1	...	...	1	...	...	1	...	...	...	...	...	...	...	2	1
General Injuries.																				
Burns and Scalds	20	19	8	10	4	12	4	4	3	...	4	1	2	...	3	1	...	1	48	37
Local Injuries.																				
Injuries of the Head.																				
Contusion	2	...	1	...	1	..	...	...	...	1	1	...	...	1	...	...	...	1	5	3
Scalp Wound—																				
Bone not exposed	...	...	...	...	3	...	17	2	18	3	21	1	9	2	2	3	3	1	73	12
Bone exposed	...	...	1	...	...	...	...	...	1	...	3	..	1	1	...	1	...	...	6	2
Concussion of the Brain	7	2	6	3	11	3	24	1	6	1	4	...	7	...	1	...	1	2	67	12
Fracture of Vault of Skull	...	...	1	...	...	...	3	...	4	...	2	...	1	...	...	...	...	...	11	...
Fracture of Base of Skull	...	...	...	...	3	...	1	...	2	1	5	...	3	...	1	1	...	...	15	2
Injuries of the Face.																				
Contusion	...	1	...	1	2	...	1	1	2	...	1	...	1	1	...	...	...	...	7	4
Wound	...	...	...	...	...	...	...	...	1	...	...	...	2	...	...	...	...	...	3	...
Fracture of Facial Bones	...	...	...	...	...	...	...	...	2	...	1	...	...	...	...	...	...	...	3	...
Do. Lower Jaw	...	...	...	...	...	...	1	2	2	...	1	1	...	...	1	...	...	...	5	3
Dislocation of Lower Jaw	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1
Injuries of the Eye.																				
Contusion	...	...	...	...	1	...	1	1	1	...	...	1	...	...	...	...	...	...	3	2
Do., with Rupture of the Globe	...	...	...	1	...	...	1	1	...	...	...	...	1	1	...	...	...	1	2	4

DISEASES.	Under 5 yrs.		5–10.		10–15		15–25.		25–35.		35–45.		45–55.		55–65.		65–75.		Total.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Local Injuries (*continued*).																				
Injuries of the Eye.																				
Contusion with Dislocation of Lens	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
Do., with Hæmorrhage into Eyeball	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Wound of the Eyelid	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...
Do. Conjunctiva	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...
Do. Sclerotic	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	1	1
Do. Cornea	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
Injuries of the Eyelids and Eye	1	2	1	...	...	...	1	1	2	...	...	...	1	...	...	...	...	...	6	3
Foreign Body in Eye	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...
Injuries of the Neck.																				
Contusion	...	...	...	...	3	...	1	...	1	...	...	...	...	...	...	...	...	...	5	...
Cut Throat	..	...	...	...	...	...	...	1	1	...	2	1	3	1	...	...	...	...	6	3
Foreign Bodies in the Œsophagus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1
Injuries of the Chest.																				
Contusion	...	...	...	...	1	1	4	...	3	2	3	...	2	4	...	...	...	2	13	9
Fractured Ribs, Lung not Wounded	...	...	...	...	1	...	2	...	3	...	5	...	6	...	3	2	2	...	22	2
Do., Lung Wounded	...	...	...	...	...	...	2	...	2	...	...	...	...	...	1	...	1	...	6	...
Injuries of the Back.																				
Contusions	...	...	2	...	1	...	9	2	9	2	5	...	1	...	1	...	2	...	30	4
Wounds	...	...	...	...	1	...	2	...	2	1	2	...	1	...	...	...	1	...	9	1
Fracture of the Spine	...	...	...	...	...	...	...	...	...	...	4	1	1	...	...	1	...	...	5	2
Injury of Spine without known Fracture	...	...	...	...	1	...	1	...	1	...	1	...	2	...	...	...	...	...	6	...
Injuries of the Abdomen.																				
Contusion	2	2	1	1	5	1	1	1	1	...	2	...	...	...	1	...	...	...	13	5
Do., with Rupture of Viscera	...	...	2	...	1	...	2	...	1	...	...	...	...	...	...	...	...	...	6	...
Wound of the Parietes	...	...	...	...	...	...	1	...	2	...	...	...	...	...	...	...	...	...	3	...
Injuries of the Pelvis.																				
Contusion	...	...	...	..	1	...	2	...	2	1	3	...	...	...	1	...	...	...	9	1

DISEASES.	Under 5 yrs.		5–10.		10–15.		15–25.		25–35.		35–45.		45–55.		55–65.		65–75.		Total.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Local Injuries (*continued*).																				
Injuries of the Pelvis—																				
Wound of Male Perinæum, Scrotum, and Penis	...	...	1	...	...	...	1	...	1	...	1	...	...	...	...	...	...	...	4	...
Wound of Female Perinæum and Vulva	...	...	...	1	...	1	...	...	...	3	...	1	...	...	...	...	...	...	...	6
Fracture of the Pelvis	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	2	...
Do. of Coccyx	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	2
Injuries of the Upper Extremity.																				
Contusion	...	...	...	...	2	...	1	...	...	1	...	1	...	...	...	...	...	...	3	2
Wound—																				
Of Arm	...	...	...	...	1	...	4	...	...	1	...	...	1	...	...	1	...	...	6	2
Of Forearm	...	...	...	...	1	...	1	...	2	2	2	...	...	...	...	...	...	...	6	2
Of Elbow	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Of Hand	...	1	3	...	7	...	14	1	4	1	2	2	4	...	...	...	...	...	34	5
Gunshot	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	2	...
Of Vessels	...	...	...	...	1	1	1	...	1	1	...	...	...	...	...	...	...	...	3	2
Fracture of the Clavicle	...	...	...	...	...	...	2	1	...	...	1	...	...	2	1	1	...	...	4	4
Do. Scapula	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...
Do. Humerus	...	...	...	...	3	...	1	...	2	...	7	...	3	...	1	...	1	...	18	...
Do. Forearm	...	...	...	...	...	...	5	1	3	...	...	...	...	...	1	1	1	...	10	2
Do. Sternum	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...
Dislocation of Shoulder	...	...	...	...	...	...	...	...	...	...	...	1	3	...	...	...	1	...	4	1
Do. of the Acromial End of Clavicle	...	...	...	...	...	...	...	...	..	...	...	...	...	...	1	...	...	...	1	...
Do. of Thumb	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Injuries of the Lower Extremity.																				
Contusion	3	4	5	...	6	2	10	3	10	4	6	1	4	1	4	1	7	6	55	22
Sprain	...	...	1	...	1	...	6	3	6	2	7	1	1	1	2	...	1	...	25	7
Wounds	...	...	4	...	11	2	6	3	9	1	8	1	...	...	...	...	1	...	38	7
Do. of Knee-joint	...	...	...	...	1	1	1	...	1	...	...	...	...	...	...	...	...	...	3	1
Fracture of the Femur	5	6	7	3	7	2	7	1	5	1	5	...	5	3	2	6	4	4	47	26
Do. Cervix Femoris	...	...	...	...	...	...	...	...	...	...	...	...	1	...	3	5	1	4	5	9
Do. Patella	...	...	...	...	...	...	1	...	2	1	9	1	4	4	...	...	1	...	17	6

DISEASES.	Under 5 yrs.		5–10.		10–15.		15–25.		25–35.		35–45.		45–55.		55–65.		65–75.		Total.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Local Injuries (*continued*).																				
Injuries of the Lower Extremity.																				
Fracture of both Bones of the Leg	1	3	10	3	2	2	23	4	26	3	33	9	25	10	15	8	3	6	138	48
Do. Tibia alone	1	...	1	...	...	1	3	...	3	...	...	...	...	1	1	...	...	...	9	2
Do. Fibula alone	1	...	...	1	3	...	8	2	11	4	13	6	11	3	2	3	...	1	49	20
Do. Bones of the Foot	...	...	...	...	...	...	...	...	1	...	...	..	...	...	...	...	...	...	1	...
Ununited Fracture	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	1	...	3	...
Dislocation of Knee	...	...	...	...	1	...	...	...	1	...	1	...	...	...	...	...	...	...	3	...
Do. of Foot	...	...	...	...	...	..	...	...	1	...	...	...	...	...	...	...	...	...	1	...
Echinococcus Hominis	...	...	...	...	...	...	1	1	1	...	...	...	...	...	...	...	...	...	2	1
Rupture of Muscle	...	...	...	...	1	..	1	...	...	...	1	...	...	...	1	1	...	...	3	2
Congenital Malformation	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	1
Unclassified Cases	1	1	2	2	6	2	12	10	13	2	5	...	3	1	4	...	...	...	46	18

SUB-TABLE (FRACTURES AND DISLOCATIONS).

NATURE OF INJURY.	Under 5 yrs.		5–10.		10–15.		15–25.		25–35.		35–45.		45–55.		55–65.		65–75.		Total.		Deaths.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Simple Fractures:																						
Skull, Base	...	...	...	...	3	...	1	...	2	1	5	...	3	...	1	1	...	...	15	2	14	1
Ribs	...	...	...	...	1	...	4	...	5	1	5	...	6	...	4	2	3	...	28	3	2	...
Spine	...	...	...	...	...	...	...	...	...	...	4	1	1	...	...	1	...	...	5	2	5	1
Pelvis	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...
Coccyx	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...
Clavicle	...	...	...	...	...	...	2	2	1	...	1	1	...	2	1	1	...	...	5	6	...	...
Sternum	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...
Scapula	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...
Humerus	...	...	...	...	3	...	...	...	2	...	7	...	2	...	1	...	1	...	16	...	1	...
Forearm	...	...	...	...	...	...	2	...	3	...	...	1	...	...	1	1	2	...	8	2	...	...
Femur, Shaft	5	6	6	4	7	2	7	1	5	1	5	...	4	2	2	5	4	4	45	25	...	...
,, Neck	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	3	1	3	3	7	1	...
Patella	...	...	...	...	...	...	1	...	2	1	9	1	5	4	...	...	1	...	18	6	1	1
Tibia and Fibula	1	3	7	3	4	1	23	4	25	3	29	9	24	10	8	7	3	4	124	44	4	...
Fibula alone	1	...	...	1	3	...	9	2	11	8	13	2	11	3	1	3	...	1	49	20	3	...
Tibia alone	1	...	1	...	2	1	3	...	2	...	...	...	...	1	1	...	...	...	10	2	...	...
Total	8	9	14	8	23	4	52	9	58	15	79	16	58	23	22	24	15	12	330	120	31	3
Deduct multiple fractures of separate bones ...																			7	3	...	...
Total number of patients under treatment.....																			323	117	...	...
Compound Fractures:																						
Skull, Vault	...	...	1	...	...	...	3	...	4	...	...	...	2	...	1	...	...	...	11	...	1	...
Bones of Face	...	...	...	...	...	...	...	...	2	...	1	...	...	...	...	...	...	...	3	...	...	...
Inferior maxilla	...	...	...	...	...	...	1	2	2	...	1	1	...	1	...	...	...	...	4	4	...	...
Humerus	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	2	...	...	...
Forearm	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...
Femur	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	1	...	...	2	1	1	...
Tibia and Fibula	...	...	1	...	1	1	...	1	1	...	4	...	2	...	7	...	1	2	17	4	4	...
Tibia alone	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	2	...	...	...
Total	...	...	2	...	2	3	5	3	10	...	6	1	6	1	9	1	1	2	43	9	6	...
Dislocations:																						
At Lower Jaw	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...
,, Sterno-Clavicular Joint	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...
,, Humerus	...	...	...	...	...	...	...	...	...	...	...	1	3	...	...	...	1	...	4	1	...	...
,, Thumb	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
,, Knee	...	...	...	...	1	...	...	...	1	...	1	...	...	...	...	...	...	...	3	..	...	...
,, Foot	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...
Total	...	...	...	...	2	...	...	1	2	...	1	1	3	...	1	...	1	...	10	2	...	...

CAUSES OF DEATH.

Disease, injury, or operation.	No. of cases.	Ages of males.	Ages of females.	Remarks.
Erysipelas—				
a. Simple	2	35—45	.....	Of the head and face, died within 24 hours of admission.
,, ...	...	45—55	.....	Of leg and thigh, complicated with hip-joint disease, exhaustion, death on the 18th day.
b. Phlegmonous	3	35—45	.....	Of penis, scrotum, and abdomen, fatal from exhaustion on the 20th day.
,, ...	...	.....	55—65	Of left lower extremity, death from exhaustion.
,, ...	...	.....	65—75	Of lower extremity, death from exhaustion on the 10th day.
Pyæmia	4	Under 5	.....	Died of exhaustion on the 4th day after admission.
,, ...	...	15—25	.....	One had necrosis of the third lumbar vertebra, pus in the theca vertebralis and in left hip-joint, death 8 days after admission.
,, ...	...	.....	.....	This was returned from the medical side, death on the 4th day after admission.
,, ...	...	45—55	.....	Followed abscess of the finger, death on the 15th day after admission.
Syphilis—				
Of Skin.....	1	25—35	.....	Rapid and extensive ulceration of throat, death from exhaustion on the 7th day after admission.
Cancer—				
A. Scirrhus—Female Breast.	3	.....	45—55	Removal of entire breast, pyæmia, pleuro-pneumonia, and chronic nephritis, death two months after admission.
,, ,,	...	.....	.....	Had symptoms of pyæmia, recovered. Rapid return in glands of axilla and neck, also anterior mediastinum, death from exhaustion 12 months after admission.
,, ,,	...	.....	55—65	Rapid increase of disease, death from exhaustion 2 months after admission. No operation was performed.
B. Medullary— Lymphatic Glands	3	.....	35—45	Disease situated in the neck, secondary deposits in the liver, fatal through peritonitis.
,, ,,	...	.....	.....	Situated in the glands of pelvis and groin, death from exhaustion.
,, ,,	...	.....	55—65	Situated in the glands of groin, fatal 28 days after admission.
Jaws	1	15—25	.....	Disease situated in the superior maxilla, no operation, death from exhaustion 6 months after admission.

Disease, injury, or operation.	No. of cases.	Ages of males.	Ages of females.	Remarks.
Cancer—				
a. Medullary—Testes	1	35—45	.....	Disease involved the spermatic cord, operation, fatal through peritonitis 3 days after operation.
Breast	1	.....	35—45	Entire breast was removed, fatal from exhaustion and return of disease 4 months after admission.
Bone	1	.....	15—25	Disease in head of humerus and scapula, removal at shoulder-joint, recovered from the operation, but died of exhaustion consequent on return of disease in glands and scapula 4 months after admission.
c. Epithelial—Tongue	2	45—55	.....	Entire tongue removed by operation, recurrent hæmorrhage, death on the 4th day after operation.
,, ...	...	55—65	.....	No operation was performed, death from exhaustion and disease of glands three months after admission.
Scrofula—Joints	4	5—10	.....	Disease of knee, amputation, died suddenly from convulsions, due to tubercular meningitis.
,, ...	...	10—15	.....	From exhaustion 10 months after admission, had extensive suppuration of thigh.
,, ...	...	15—25	.....	From exhaustion 11 months after admission, complicated with phthisis.
,, ...	...	.....	.....	From exhaustion 18 months after admission, consequent on profuse suppuration.
Aneurism—				
Subclavian Artery.....	1	25—35	.....	Ligature was performed in the third part of its course, died of pyæmia four weeks after admission.
Gluteal ,, ...	1	15—25	.....	Aneurism diffuse, among gluteal muscles, owing to ulceration into an artery during the progress of sacro-iliac disease, ligature of common iliac, exhaustion 2 days after admission.
Popliteal ,, ...	2	25—35	.....	Ligature of femoral artery in Scarpa's space, with a carbolized ligature. Return of pulsation in sac 24 hours after operation, ulceration at point of ligature, fatal through hæmorrhage.
,, ,, ...	...	45—55	.....	Ligature of femoral artery, ulceration of proximal end of artery, 3 months after ligature, hæmorrhage, exhaustion 4 months after operation.
Hernia—				
Umbilical	1	.....	35—45	Operation, death from exhaustion on 2nd day.
Inguinal.....	9	35—45	.....	Operation, sac opened, peritonitis present, fatal through exhaustion on the 3rd day.

Disease, injury, or operation.	No. of cases.	Ages of males.	Ages of females.	Remarks.
Hernia—				
Inguinal	9	35—45	.....	Operation, sac opened, peritonitis after operation, fatal through exhaustion on the 5th day.
„	...	45—55	.....	Operation, sac opened, peritonitis, fatal through exhaustion on the 2nd day.
„	...	.....	.....	Operation, sac opened, death was the result of cancerous obstruction at ilio-cæcal valve, within 24 hours of admission.
„	...	.....	.....	Operation, sac opened, peritonitis due to gut having given way, death within 24 hours of admission.
„	...	55—65	.....	Operation, sac opened, peritonitis, death on the 4th day.
„	...	.....	.....	No operation was performed, the hernia being reduced, but he died of chronic bronchitis and emphysema 12 days after admission.
„	...	.....	55—65	Operation, sac opened, death from exhaustion, on the 5th day after admission.
„	...	.....	65—75	Operation, sac opened, death within 24 hours of admission.
Femoral	3	.....	45—55	Hernia was not detected, until after death, which took place within 24 hours of admission.
„	...	.....	.....	Operation, sac opened, death from peritonitis 24 hours after admission.
„	...	.....	55—65	Operation, sac opened, rupture of gangrenous intestine, peritonitis, fatal within 24 hours of admission.
Ventral	1	55—65	.....	Operation, no relief, death the result of internal obstruction, due to a band of fibrous tissue, 1 day after operation.
Intestinal Obstruction	3	.....	45—55	Operation for supposed femoral hernia, fibrous stricture of intestine, gangrene of two feet of lower end of ileum, acute peritonitis, fatal 24 hours after admission.
„ „	...	.....	55—65	Colotomy was performed, fatal 24 hours afterwards.
„ „	...	.....	.....	Colotomy was performed, right side, acute peritonitis, death 10 days after operation.
Fistula-in-Ano	2	.....	15—25	Fatal through peritonitis, due to bowel giving way, 1 month after admission.
„	...	.....	25—35	Fatal through erysipelas, 3 weeks after admission.
Lupus of Anus	1	35—45	.....	Fatal through exhaustion and phthisis, 3 months after admission.
Chronic Cystitis	1	15—25	.....	Had tubercular disease of bladder, and died of exhaustion, 15 days after admission.

Disease, injury, or operation.	No. of cases.	Ages of males.	Ages of females.	Remarks.
Calculus vesicæ	1	45—55	.....	Lithotomy was performed, death from pyæmia 7 days after operation.
Enlarged Prostate	2	55—65	.....	Retention followed, had acute inflammation of kidney, uræmic poisoning, death 12 days after admission.
„ „	...	65—75	.....	Retention, acute cystitis, death from exhaustion, on the 14th day after admission.
Stricture	4	35—45	.....	Had acute erysipelas of face, while in hospital, and died of exhaustion 1 month after admission.
„	...	55—65	.....	Had reflex paraplegia, exhaustion, death on the 10th day after admission.
„	...	.....	.....	Had uræmic poisoning, due to disease of kidney, death a week after admission.
„	...	.....	.....	Had diarrhœa, and died of exhaustion, 2 days after admission.
Extravasation of Urine	2	35—45	.....	Lived; but 5 hours after admission, extravasation most extensive.
„ „	...	45—55	.....	Death from exhaustion, 1 month after admission.
Disease of the Ovary	6	.....	15—25	Ovariotomy was performed, fatal through peritonitis.
„ „	...	.....	35—45	Ovariotomy was performed, fatal through pyæmia.
„ „	...	.....	45—55	Ovariotomy was performed, fatal through peritonitis.
„ „	...	.....	55—65	Fatal through exhaustion, no operation was performed.
„ „	...	.....	.....	Fatal through peritonitis, after tapping.
„ „	...	.....	.....	Fatal through chronic peritonitis, and ascites, one month after admission.
Acute Necrosis	1	10—15	.....	Fatal through pyæmia, 8 days after admission.
Caries.....	1	.....	25—35	Caries of spine, fatal through exhaustion, 5 months after admission.
Necrosis.....	2	5—10	.....	Necrosis of lower jaw, operation, removal, exhaustion 10 days after admission.
„	...	15—25	.....	Necrosis of ilium, exhaustion, fatal 1 month after admission.
Myeloid Tumour.....	1	.....	35—45	Of humerus, death from exhaustion, 1 month after admission.
Diseases of Joints—				
Chronic Synovitis	1	15—25	.....	Resection of knee was performed, hæmorrhage, exhaustion 5 days after operation.
Ulceration of Cartilage	3	35—45	.....	Amputation was performed, died of exhaustion.
„ „	...	45—55	.....	Amputation was performed, died of exhaustion, 13 days after operation.

Disease, injury, or operation.	No. of cases.	Ages of males.	Ages of females.	Remarks.
Ulceration of Cartilage	3	.....	25—35	Amputation was performed, died of pyæmia 4 months after admission.
Abscess into Joints.....	1	35—45	.....	Disease of hip, with numerous abscesses, exhaustion 1 month after admission.
Disease of Bursæ.....	1	45—55	.....	Received a wound of bursa over the olecranon, pyæmia, death 3 weeks after admission.
Abscess of Spine.....	2	.....	15—25	Fatal; through profuse suppuration, 3 months after admission.
„ „	...	.....	25—35	Fatal; through profuse suppuration, 4 months after admission.
Abscess of cellular Tissue	9	Under 5	.....	Situated over chest, died within 24 hours of admission.
„ „	...	15—25	.....	Situated in gluteal region, fatal through exhaustion, 1 month after admission.
„ „	...	25—35	.....	Situated among muscles of neck, death from exhaustion 6 months after admission.
„ „	...	.....	.....	Fatal; through delirium tremens, 7 days after admission.
„ „	...	35—45	.....	Situated among muscles of neck, fatal 1 month after admission.
„ „	...	45—55	.....	Situated over arm and forearm, death from exhaustion, 1 day after admission.
„ „	...	.....	.....	Extensive abscess, with sloughing over left knee, diseased heart, death 3 weeks after admission.
„ „	...	.....	35—45	Followed after parturition, fatal through exhaustion, 1 month after admission.
„ „	...	.....	55—65	Situated among muscles of neck, fatal within 24 hours of admission.
Fibro-cellular Tumour.....	1	Under 5	.....	Removed, death from convulsions, 2 days after operation.
Recurrent Fibroid	3	.....	15—25	Operation, removal, death from tetanus, 4 days after.
„ „	...	45—55	.....	Death from exhaustion (no operation was performed), 3 months after admission.
„ „	...	55—65	.....	Situated in lower dorsal region, death from exhaustion 5 days after admission.
Hæmorrhagic Cyst	1	35—45	.....	Ulceration into a branch of the external carotid, ligature of the common carotid, hæmorrhage, exhaustion, death 3 weeks after admission.
Ulcer	2	25—35	.....	Chronic ulcer of leg, death from exhaustion 6 months after admission.
„	...	55—65	.....	Fatal through hæmorrhage within 24 hours of admission.
Carbuncle	3	35—45	.....	Situated over cheek, incision, hæmorrhage, death from exhaustion 2 months after admission.
„	...	.....	.....	Situated over neck, death from pyæmia, 4 days after admission.

Disease, injury, or operation.	No. of cases.	Ages of males.	Ages of females.	Remarks.
Carbuncle.....	3	.....	45—55	Situated over scapula and spine, death from exhaustion 2 months after admission.
Gangrene.....	1	45—55	.....	Of left foot, morbis cordis, death 10 days after admission.
Burns and Scalds	29	Under 5	.....	5 cases, all fatal by collapse.
" "	...	5—10	.....	3 cases, 2 by collapse, 1 by exhaustion.
" "	...	15—25	.....	1 case fatal, through exhaustion, 15th day.
" "	...	45—55	.....	2 cases, 1 fatal by collapse, the other, by exhaustion 1 month after admission.
" "	...	.....	Under 5	8 cases, 6 fatal by collapse, 2 by exhaustion.
" "	...	.....	5—10	6 cases, 3 fatal by collapse, 3 by exhaustion.
" "	...	.....	15—25	1, fatal by collapse.
" "	...	.....	25—35	1, " " "
" "	...	.....	35—45	1, " " "
" "	...	.....	55—65	1, fatal by exhaustion.
Scalp Wound	3	.....	25—35	Had erysipelas, fatal 15 days after admission.
" "	...	.....	.....	Had erysipelas, fatal 3 weeks after admission.
" "	...	.....	45—55	Wound most extensive, profuse suppuration, death 1 month after admission through exhaustion.
Concussion of the Brain.....	...	35—45	.....	No fracture was detected, but the brain tissue was lacerated, and ecchymosed, considerable effusion of blood, beneath arachnoid, fatal, 11 days after admission.
Fracture of Vault of Skull— Compound—				
a. With Depression ...	1	45—55	.....	Fatal; 2 days after admission.
Fracture of Base of Skull	15	10—15	.....	Followed by acute meningitis, fatal, on the 3rd day after admission.
" "	...	.....	.....	Fatal; within 24 hours.
" "	...	.....		" " " "
" "	...	15—25	.....	Fatal; within 2 days.
" "	...	25—35	.....	" " " "
" "	...	.....	.....	Fatal; within 24 hours.
" "	...	.....	.....	" " " "
" "	...	35—45	.....	" " " "
" "	...	.....	.....	" " " "
" "	...	.....	.....	" " " "
" "	...	.....	.....	Fatal; within 2 days.
" "	...	45—55	.....	" " " "
" "	...	.....	.....	" " " "
" "	...	55—65	.....	" " " "
" "	...	.....	55—65	Fatal; on the 3rd day after admission.
Cut Throat	1	45—55	.....	Death from exhaustion, 27 days after admission.
Fractured Ribs.....	2	55—65	.....	Had hæmothorax, fatal, 8 days after admission.
"	...	65—75	.....	Had hæmothorax, fatal, 8 days after admission.

Disease, injury, or operation.	No. of cases.	Ages of males.	Ages of females.	Remarks.
Contusions generally about Body	1	65—75	.....	Tetanus followed, fatal within 24 hours of admission.
Fracture of the Spine	6	35—45	.....	Fracture and dislocation, of 1 lumbar vertebra, laceration of spinal cord, paralysis, death from exhaustion 1 month after admission.
" "	...	.....	.....	Fracture in the cervical region, fatal within 3 days after admission.
" "	...	.....	.....	Fracture in the lumbar region, fatal within 24 hours of admission.
" "	...	.....	.....	Fracture of eleventh, and twelfth dorsal, fatal 3 weeks after admission.
" "	...	45—55	.....	Fracture in the cervical region, fatal on the 17th day after admission.
" "	...	.....	55—65	Fracture in the lower cervical, fatal within 3 days of admission.
Contusion of Abdomen	1	55—65	.....	Fatal, within 24 hours, probably rupture of the liver, no post-mortem allowed.
Rupture of Abdominal Viscera	6	5—10	.....	Rupture of the jejunum, peritonitis, fatal on the 5th day.
" " " ...	...	.....	.....	Rupture of the liver, fatal within 24 hours.
" " " ...	...	15—25	.....	Rupture of the liver, fatal within 36 hours.
" " " ...	...	.....	.....	Rupture of the liver, fatal the 2nd day.
" " " ...	...	35—45	.....	Rupture of the kidney, fatal on the 12th day.
" " " ...	...	45—55	.....	Rupture of bladder, fatal within 24, hours,
Wound of the Male Perinæum..	1	35—45	.....	Had lacerated urethra, extravasation, delirium tremens, fatal the 6th day.
Wound of the Female Perinæum and Vulva	1	.....	25—35	Death; was the result of hæmorrhage, abortion having followed the injury, 18 days after admission.
Wound of Arm	1	45—55	.....	Lacerated wound of arm, and forearm, fatal through pyæmia three weeks after admission.
Wound of Hand	1	5—10	.....	Lacerated wound of middle, and ring finger, right hand, 11 days prior to admission, fatal, through tetanus, within 24 hours of admission.
Fracture of Humerus	1	55—65	.....	Fatal, through chronic bronchitis, on the 23rd day after admission.
Fracture of Femur— Simple	1	65—75	.....	Had chronic albuminuria, and died with uræmic convulsions, 6 weeks after admission.
Compound	1	65—75	.....	Fracture also of tibia, and fibula, fatal, within 24 hours from collapse.
" Cervix Femoris.....	3	65—75	.....	Fatal, through exhaustion, on the 10th day.
" " "	...	.....	.....	Fatal, through exhaustion, the 6th week.
" " "	...	.....	65—75	Fatal, through exhaustion, 5 weeks after admission.

Disease, injury, or operation.	No of cases.	Ages of males.	Ages of females.	Remarks.
Fracture of both Bones of Leg—				
Simple	3	25—35	.....	Had severe internal abdominal injury, and died the same day.
„ „	...	55—65	.....	Had also severe contusion, fatal, through exhaustion, on the 7th day.
„ „	...	Above 75	.....	Fatal, through exhaustion, on the 7th day.
Comminuted ...	1	35—45	.....	Fatal, through delirium tremens, 3 days after admission.
Compound	4	5—10	.....	Compound fracture of leg, traumatic gangrene of great toe, tetanus, secondary amputation of leg, recurrence of tetanus, fatal on the 8th day.
„	...	25—35	.....	Railway smash, compound fracture of both legs, death within 24 hours.
„	...	45—55	.....	Primary amputation was performed, fatal on the 6th day.
„	...	65—75	.....	Fatal, 2 days after admission, of exhaustion.
„ Fibula, Simple	3	15—25	.....	Was in an extreme condition of phthisis, died on the 5th day after admission.
„ „ „	...	35—45	.....	Fatal, through delirium tremens, 4 days after admission.
„ „ „	...	„ „	.....	Fatal, through delirium tremens, 2 days after admission.
Suppuration of Orbit..... ...	1	.....	25—35	Fracture of right nasal bone, with extension of fracture, through ethmoid and sphenoid (the result of a blow), meningitis, with hemiplegia, followed by death 6 days after admission.
Ununited Fracture	1	35—45	.....	Ununited fracture of the right femur, lower third, operation, ends of bone removed, death from shock and exhaustion, on the 5th day after operation.
Human Parasites—				
Echinococcus Hominis	1	15—25	.....	Situated in the cellular tissue behind the prostate, had a most acute attack of erysipelas of face, which produced death.

SURGICAL OPERATIONS PERFORMED.

OPERATIONS.	AGE AND SEX.																											
	Under 5 Years.		5—		10—		15—		20—		30—		40—		50—		60—		65—		70—		75 and above.		Total.		Cured or Relieved.		Not Relieved.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Operations on the Eye.																																
Strabismus	...	3	1	3	2	1	2	2	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	11	5	10	...	1	...	...
Iridectomy—																																
In one Eye	1	3	...	3	...	1	1	...	2	1	2	...	3	4	1	1	1	2	...	1	...	...	...	...	11	16	8	16	3	...	...	...
In both Eyes	...	...	1	...	...	1	...	1	...	...	1	...	...	...	...	1	...	1	...	1	...	...	...	...	2	5	2	5	...	...	...	...
Synechia	...	...	...	...	...	...	1	...	1	...	...	..	...	...	...	...	2	...	...	...	...	...	...	...	4	...	4	...	...	...	...	...
Cataract—																																
Flap Operation	...	...	...	...	...	...	...	...	...	...	...	...	2	...	1	...	...	...	...	...	2	...	...	...	5	...	5	...	...	...	...	...
Linear Extraction	...	1	...	1	...	...	...	...	...	...	...	...	1	...	...	...	1	3	2	...	...	...	...	...	4	5	3	4	1	1	...	...
Needle Operation	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	1	...	...	...	...
Suction „	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...
Removal of Capsules	...	...	...	...	1	...	...	...	...	...	1	1	...	1	...	...	...	...	...	...	...	...	...	...	2	2	2	2	...	...	...	...
Abscission	...	2	1	...	...	1	...	2	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	2	5	1	5	1	...	...	...
Extirpation of Globe	...	...	1	...	...	...	2	1	2	2	...	...	1	...	...	1	...	...	...	...	...	...	...	...	6	4	6	4	...	...	...	...
Lachrymal Fistula	...	...	...	...	...	...	...	...	...	1	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	3	...	3	...	...	...	...
Pannus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	1	...	...	..	...	...
Hypopyon (pus evacuated)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	1	...	...	...	..	...
Trichiasis	...	...	...	...	...	...	...	...	...	...	1	2	...	...	...	...	...	...	...	...	...	...	...	...	1	2	1	2	...	..	...	...
Entropion	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	..	...	...
Ectropion	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	..	...	...
Lead Stain on Cornea (removal)	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	..	...	...
Exploratory Operation	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...
Artificial Eye fitted	...	...	...	...	...	...	...	1	1	1	...	...	...	...	...	...	...	..	...	...	...	...	...	...	1	2	1	2	...	...	...	...

OPERATIONS.	AGE AND SEX.																											
	Under 5 Years.		5—		10—		15—		20—		30—		40—		50—		60—		65—		70—		75 and above.		Total.		Cured or Relieved.		Not Relieved.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Ligature of Arteries	...	...	...	...	...	1	1	...	5	1	4	...	1	2	1	...	...	...	...	...	...	...	...	...	12	4	8	4	...	...	4	...
Obliteration of Varicose Vein	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	1	...	...	...	...
Plugging of Nostrils	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	2	...	...	...	...	...	...	1	2	1	2	...	...	...	...
Excision of Joints.																																
For Disease:—Elbow	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	2	...	...	...	...	...
Knee	...	...	1	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	1	1	...	...	1	...
Removal of Superior Maxilla	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	1	...	1	...	...	...	...	...
Removal of Sequestra:																																
From Head and Face	...	...	1	1	...	...	...	1	1	3	2	...	...	1	...	...	...	...	...	...	...	...	...	...	4	6	4	6	...	...	...	...
„ Upper Extremity	...	...	1	...	...	...	4	1	1	3	...	1	...	1	2	...	...	...	...	...	...	...	...	...	8	6	8	6	...	...	...	...
„ Lower Extremity	1	...	3	2	5	5	5	1	2	1	7	...	2	...	2	...	...	1	...	...	..	...	...	...	27	10	26	10	...	...	1	...
Trephining:—Tibia	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...
Ununited Fracture:																																
Femur	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...
Forcible flexion of Joints	...	...	...	...	...	...	1	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	3	...	...	...	...	...
Amputations.																																
Primary:																																
Arm	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...
Forearm	...	...	...	...	...	...	1	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	3	...	...	...	...	...
Parts of Hand, &c.	...	1	2	...	3	1	7	...	3	...	2	...	2	...	1	...	...	...	...	...	...	...	...	...	20	2	20	2	...	...	...	...
Thigh	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	1	1	...	1	...	...	1	...
Leg	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...
Foot	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...

OPERATIONS.	AGE AND SEX.																											
	Under 5 Years.		5—		10—		15—		20—		30—		40—		50—		60—		65—		70—		75 and above.		Total.		Cured or Relieved.		Not Relieved.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Amputations (*continued*).																																
Secondary:																																
Parts of Hand, &c.	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	2	...	2	...	...	...	...	...
Thigh	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...
Leg	...	...	1	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	3	...	2	...	...	...	1	...
For Disease:																																
Shoulder Joint	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...
Forearm	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	1	...	...	...	...	...	...	...	3	...	3	...	...	...	...	...
Part of Hand	...	...	...	...	...	...	...	...	...	1	1	3	1	...	4	...	...	...	...	1	...	...	...	...	6	5	6	5	...	...	...	...
Thigh	1	...	2	...	1	...	4	1	3	2	3	...	1	...	...	...	...	...	...	...	...	...	...	...	15	3	12	2	...	...	3	1
Leg	...	...	...	...	...	...	...	...	2	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	3	1	3	1	...	...	...	...
Ankle Joint	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	2	...	...	...	...	...
Toe	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...
Removal of Tumours.																																
Cancer of Breast	...	...	...	...	...	...	...	...	...	...	...	...	...	13	...	8	...	1	...	...	...	...	...	...	...	22	...	19	...	...	...	3
Other Tumours of Breast	...	...	...	...	...	...	...	1	...	3	...	...	...	2	...	2	...	1	...	...	...	...	...	...	...	9	...	9	...	...	...	...
Cancer of the Tongue	...	...	...	...	...	...	...	...	...	...	...	...	2	2	1	...	...	...	1	...	...	...	...	...	4	2	3	2	...	...	1	...
Cancer of the Lip	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	2	...	2	...	...	...	...	...
Cancer of Testicle	...	...	...	...	...	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	3	...	3	...	...	...	...	...
Cancer of Penis	...	...	...	...	...	...	...	...	...	...	1	...	...	...	2	...	1	...	...	...	...	...	...	...	4	...	4	...	...	...	...	...
Exostosis	...	...	1	...	...	...	1	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	4	...	...	...	...	...
Epulis	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...
Cartilaginous	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...

OPERATIONS.	AGE AND SEX.																											
	Under 5 Years.		5—		10—		15—		20—		30—		40—		50—		60—		65—		70—		75 and above.		Total.		Cured or Relieved.		Not Relieved.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Removal of Tumours.																																
Other Tumours:																																
Cancerous	...	...	...	...	1	...	...	...	...	...	2	...	3	2	2	1	2	1	3	...	...	...	...	...	13	4	12	4	...	...	1	...
Recurrent	...	...	...	...	...	...	...	...	...	1	...	...	...	...	2	...	...	...	1	...	...	...	...	...	3	1	3	...	...	...	...	1
Non-Cancerous	...	1	2	1	2	5	...	...	2	5	2	5	2	5	1	1	...	...	...	1	...	...	...	...	11	24	11	24	...	...	...	...
Polypi:—Nasal	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	1	1	1	...	...	...	...
Ear	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	1	...	1	...	...	...	...
Umbilicus	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...
Uterus	...	...	...	...	...	...	...	...	...	...	...	1	...	3	...	...	...	...	...	...	...	1	...	...	...	5	...	5	...	...	...	...
Vascular Tumour of Urethra	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	2	...	1	...	...	...	...	...	...	...	5	...	5	...	...	...	...
Enlarged Bursæ Patellæ	...	...	...	...	...	...	...	1	1	2	...	...	1	...	...	...	...	...	...	...	...	...	...	...	2	3	2	3	...	...	...	...
Nævi	1	4	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	5	2	5	...	...	...	...
Removal of Foreign Bodies.																																
Loose Cartilage from Knee Joint	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	1	...	1	...	...	...	...
Foreign body from the Ear	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	2	...	...	...	...
Set of False Teeth removed from Œsophagus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...
Removal of Calculi.																																
By Lithotomy:—Lateral	1	...	4	...	2	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	9	...	8	...	...	...	1	...
By Urethral Dilatation	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...
From Urethra	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...

OPERATIONS.	AGE AND SEX.																													
	Under 5 Years.		5—		10—		15—		20—		30—		40—		50—		60—		65—		70—		75 and above.		Total.		Cured or Relieved.		Not Relieved.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Incisions.																														
Tracheotomy	1	...	...	...	...	...	1	1	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	2	3	...	2	...	...	2	1
For Hernia :																														
Umbilical :																														
Herniotomy—																														
Opening of Sac	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	2	...	1	...	...	...	1
Inguinal :																														
Herniotomy—																														
Opening of Sac	...	...	...	...	...	...	...	...	1	...	1	1	4	...	2	1	1	...	1	...	...	1	...	...	10	3	4	1	...	...	6	2
Without opening	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	2	...	...	...	...	...
Femoral :																														
Herniotomy—																														
Opening of Sac	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	4	...	2	...	...	...	...	...	...	...	7	...	5	...	...	...	2
Without opening	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	1	...	1	...	1	...	...	...	...	...	7	...	7	...	...	...	...
Colotomy	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	1	2	1	...	...	...	...	2
Exploratory incision for supposed Hernia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	1	1	...	...	...	...	1	1
Fistula in Ano	...	...	...	...	...	...	...	1	1	5	1	1	5	1	...	...	...	...	1	...	...	...	...	...	8	8	8	8	...	...	...	...
Fissure of the Anus	...	...	...	...	...	...	...	1	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	2	1	2	1	...	...	...	...
Hæmorrhoids—																														
Internal, by Ligature or Excision	...	...	...	...	...	...	...	...	...	1	1	...	4	...	...	...	...	...	...	...	...	...	...	...	5	1	5	1	...	...	...	...
Perineal Section	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...
Ovariotomy	...	...	...	...	...	...	...	...	...	1	...	1	...	2	...	...	...	...	...	...	...	...	...	...	...	4	...	1	...	...	...	3
Mechanical obstacle to the action of the Uterus	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	2	...	...	...	...

OPERATIONS.	AGE AND SEX.																											
	Under 5 Years.		5—		10—		15—		20—		30—		40—		50—		60—		65—		70—		75 and above.		Total.		Cured or relieved.		Not relieved.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
INCISIONS—*continued.*																														
Tenotomy	2	2	8	7	1	...	2	2	...	...	1	1	...	...	...	...	..	...	...	...	...	...	...	...	14	12	14	12	...	...	...	...
Cysts—Various	...	...	...	...	...	...	...	...	1	2	...	...	1	1	...	...	...	...	...	...	...	...	...	...	2	3	1	3	...	...	1	...
REPARATIVE OPERATIONS.																														
For Cicatrices	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...
Transplanting Skin	...	...	...	...	...	...	...	...	...	1	3	3	3	...	...	...	3	...	...	1	...	...	...	...	9	5	9	5	...	...	...	...
Vesico-Vaginal Fistula	...	...	...	...	...	...	...	...	...	5	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	7	...	7	...	...	...	...
Prolapsus Ani	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...
Harelip	6	4	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	4	6	4	...	...	...	...
Cleft Palate	...	1	...	3	...	1	1	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	8	1	8	...	...	...	...
Phimosis	3	...	2	...	...	...	3	...	5	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	14	...	14	...	...	...	...	...
Paracentesis—Ovarian	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	1
Of Hydrocele	...	...	...	...	...	...	3	...	2	..	3	...	2	...	3	...	...	...	...	...	...	...	...	...	13	...	13	...	...	...	...	...
Plastic operation for Injury	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	1	...	...	...	...
Ingrowing Toe-Nail	...	...	...	...	...	...	1	2	1	2	...	1	...	...	...	...	...	...	...	...	...	...	...	...	2	5	2	5	...	...	...	...

SUB-TABLE, SHOWING THE NUMBER OF CASES OF ERYSIPELAS, PYÆMIA, &c.

DISEASES.	Under 5 Years.		5—10.		10—15.		15—25.		25—35.		35—45.		45—55.		55—65.		65—75.		75—85.		Total.		Deaths.		Per-centage of Deaths.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1. Erysipelas—Admissions	...	1	...	...	...	...	5	1	7	3	3	1	4	3	...	1	...	1	1	...	20	11	3	2	15·	18·1
2. Do. occurring in Hospital	...	...	...	...	...	...	...	1	1	...	2	...	1	...	...	...	...	...	...	...	4	1	2	1	50·	100·
3. Do. do. after Operations	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
1. Pyæmia—Admissions	...	...	...	...	1	...	2	...	...	1	...	1	2	1	...	...	...	...	...	...	5	3	5	...	100·	...
2. Do. occurring in Hospital	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	1	...	...	...	...	2	1	2	...	100·	...
3. Do. do. after Operations	...	...	...	...	...	...	...	...	1	2	1	...	1	1	...	1	...	...	...	...	3	4	3	3	100·	75·
1. Phagedæna—Admissions	...	1	...	...	...	...	...	2	1	2	1	1	1	...	...	...	...	...	...	...	3	6	...	...	...	...
1. Gangrene—Admissions	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	2	...	...	...	...	...
2. Do. occurring in Hospital	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
1. Diffuse Cellulitis—Admissions	...	...	...	...	1	1	5	...	3	2	2	6	5	4	2	1	1	...	...	...	19	14	2	...	10·53	...
2. Do. occurring in Hospital	...	...	...	1	1	...	4	...	1	1	2	1	1	...	1	...	...	...	...	...	10	3	...	...	...	...
3. Do. do. after Operations	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...
1. Tetanus—Admissions	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	100·	...
2. Do. occurring in Hospital	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	1	100·	100·
2. Smallpox—occurring in Hospital	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...
2. Typhoid—occurring in Hospital	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...
2. Febricula—occurring in Hospital	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...
2. Rheumatism—occurring in Hospital	...	...	...	...	...	...	2	1	1	1	1	...	1	...	...	...	...	...	...	...	5	2	...	...	...	...
2. Bronchitis, Pneumonia, Tonsillitis, Hæmoptysis, Pleurisy—occurring in Hospital	...	...	1	...	...	...	1	...	2	...	2	...	1	1	2	...	...	...	...	...	9	1	2	1	22·22	100·
2. Delirium Tremens—occurring in Hospital	...	...	...	...	...	...	...	...	2	...	3	...	2	...	...	...	...	...	...	...	7	...	4	...	57·14	...
1. Hæmorrhage after Wounds	...	...	...	...	...	...	2	...	3	2	1	1	...	1	...	...	...	...	...	...	6	4	...	1	...	25·
2. Do. occurring in Hospital	...	...	...	...	...	...	...	...	...	...	2	2	...	...	...	...	...	...	...	...	2	2	2	...	100·	...
3. Do. Secondary, after Operations	...	...	...	...	...	...	3	1	1	...	1	...	4	1	...	1	...	...	...	...	9	3	6	...	66·66	...

OCCUPATIONS OF THE MALE PATIENTS
AMONG THE SURGICAL CASES OF THE YEAR 1871.

Actors	2	Colour shopman	1	Grocers	6
Agents and collectors	6	Commercial clerks	2	Grooms	10
Apprentice	1	Commercial travellers	8	Gunsmith	1
Attendant on the insane	1	Commission agent	1	Gutta-percha bootmakers	2
Bagmaker	1	Compositors	6	Hammer-maker	1
Bakers	5	Confectioners	2	Hairdressers	4
Barber	1	Cooks	6	Hatters	4
Bargemen	2	Coopers	5	Hawkers	19
Barmen	13	Cork-cutters	2	Hemp-dresser	1
Basket-makers	2	Corndealers	2	Horsedealers	2
Bedding manufacturer	1	Costermongers	13	Horsekeepers	4
Bill-poster	1	Crossing-sweepers	4	Hosier	1
Blacksmiths	13	Cutler	1	Hotel servants	2
Blindmaker	1	Dairymen	2	House-agent's assistant	1
Blocker	1	Deal porter	1	Indigo-workers	2
Boatmen	4	Decorators	3	Innkeeper	1
Boiler-maker	1	Distiller	1	Ironmonger	1
Bonnet-shape maker	1	Dock labourers	5	Iron-moulders and iron-plate workers	4
Bookbinders	5	Drapers	8	Jewellers	2
Boot-finisher	1	Draymen	5	Jobber	1
Bootmakers	13	Drovers	8	Journalist	1
Boremakers	2	Dustman	1	Labourers	350
Bone-boiler	1	Dyers	3	Lacemaker	1
Boxmaker	1	Engine-drivers	3	Lamplighters	2
Brassfounders & finishers	8	Engineers	14	Law clerk	1
Brass-turner	1	Engravers	2	Lead moulder	1
Brewers	6	Envelope-folders	3	Leather-case maker	1
Bricklayers	20	Errand boys	18	Leathercutters	2
Brickmakers	2	Excavator	1	Letter-carriers	3
Brokers	2	Factory boy	1	Letter-pressman	1
Brushmakers	5	Farmers	4	Licensed victuallers	3
Builders	4	Farm labourers	11	Lightermen	4
Butchers	20	Farrier	1	Lithographers	12
Butlers	5	Firemen	2	Locksmith	1
Cabinet-makers	25	Fisherman	1	Looking-glass silverer	1
Cabmen	20	Fishmongers	6	Machine boys	8
Carmen	88	Flock-cleaner	1	Masons	2
Carpenters	28	Footmen	3	Match-box filler	1
Carriers	3	French-polishers	12	Matmakers	2
Carters	2	Fringemaker	1	Mattress-maker	1
Cellarmen	9	Fruitseller	1	Meat salesman	1
Chairmakers	8	Furrier	1	Metal-workers	5
Cheesemongers	2	Gamekeeper	1	Milkmen	4
Chemist	1	Gardeners	18	Millers	3
Cigar-makers	3	Gasfitters	7	Miner	1
City messengers	2	Gasman	1	Musician	1
Clerks	18	Gate porter	1	Navvies	3
Clickers	2	General dealers	7	Newsvendors	4
Clock- and watch-maker	1	Gentleman	1	Night watchman	1
Cloth-cutters & workers	2	Gilder	1	Office boys	2
Coach-builder	1	Glass-blower	1	Oilmen	3
Coachmen	20	Glass-cutters	2	Optician	1
Coach-painter	1	Glass-worker	1	Organ-grinder	1
Coal-dealers	2	Gold-chasers	3	Ostlers	8
Coal-heaver	1	Gold-lace embroiderers	2	Omnibus conductor	1
Coal-porter	1	Gold-wire drawer	1	Packers	11
Coffee-house keeper	1	Grainers	2	Packing-case makers	3
Collar-makers	2	Greengrocers	2		

Painters	26	Sailors	18	Tanners	2
Paper-collar maker	1	Sawyers	12	Telegraph boys	2
Paper-folders	3	Scaffold-erector	1	Tinmen	6
Paper-glazer	1	Scalemaker	1	Tobacco-cutter	1
Paper-hangers	8	Scavengers	1	Tobacconists	2
Paper-makers	2	Scentmaker	1	Trussmaker	1
Paper-ruler	1	Schoolboys	23	Turners	4
Paper-stainers	4	Schoolmaster	1	Typefounders	4
Passengers' agents	3	Scripture reader	1	Umbrella-maker	1
Photographers	2	Servants (gentlemen's)	3	Undertaker	1
Piano-makers	3	Shoeblack	1	Van boys	2
Picture-frame makers	2	Shoemakers	19	Varnisher	1
Pilot	1	Shopmen and boys	30	Waiters	15
Plasterers	3	Signalman	1	Walkingstick-maker	1
Platelayer	1	Silversmith	1	Warders (prison)	3
Plumbers	5	Skindressers	8	Warehousemen	20
Pocket-case makers	2	Slaughterman	1	Watch-balance makers	2
Pointsmen	1	Smiths	8	Watch-case finishers	7
Porters	60	Soapmaker	1	Watchmen	2
Postmen	2	Soda-water manufacturers	2	Watermen	4
Potmen	16	Soldiers	6	Waxworker	1
Press boy	1	Stableman	1	Weavers	2
Print-cutters	2	Stationers	3	Whalebone-cutter	1
Printers	28	Stencil-cutter	1	Wharf labourer	1
Printers' boys	11	Stevedore	1	Wheelwright	1
Publicans	7	Steward	1	Whipmakers	2
Railway inspector	1	Stokers	10	Whipthong-maker	1
Railway porters	12	Stonemasons	2	Wine-bottler	1
Rag-sorter	1	Sugar-refiner	1	Wine-coopers	2
Rib-finisher	1	Surgical-instrument makers	3	Wireworkers	4
Rigger	1	Sweep	1	Wood-carvers	4
Rivet boy	1	Tailors	20	Wood-turner	1
Roadmaker	1	Tallowchandler	1	Wool-carder	1
Saddlers	2			Zinc-workers	2
Sailmakers	3				

OCCUPATIONS OF THE FEMALE PATIENTS AMONG SURGICAL CASES OF THE YEAR 1871.

	In General Wards.	In Venereal Wards.		In General Wards.	In Venereal Wards.
Artificial-flower makers ...	2	—	Lead-workers	2	—
Barmaids	2	—	Leather-purse makers.....	1	1
Bagmaker	1	—	Lucifer-maker	1	—
Bonnet-shape makers	1	1	Machinists.....	18	—
Bookfolders	6	1	Manglewomen	2	—
Booksellers	2	—	Mantlemakers	2	—
Bookstitcher	1	—	Matmaker	2	—
Bootmender	1	—	Milliners	6	—
Boot-top fitters	2	—	Missionary.....	1	—
Boxmakers	3	—	Needlewomen	20	—
Bracemakers	1	—	Netmaker	1	—
Braidmaker	1	—	Nurses (hospital)	14	—
Brushmakers.....	2	—	„ (domestic).....	20	—
Cartridge-makers	1	1	Paper-collar maker	1	—
Charwomen	15	—	Paper-stainers	2	—
Collar-makers	2	—	Photograph-framer	1	—
Cooks.....	4	—	Prostitutes	4	304
Costermongers	4	—	Sackmaker	1	—
Domestic (married)	120	50	Schoolmistresses	3	—
Dressmakers	10	2	Servants	217	29
Envelope-makers	3	—	Shirtmaker	1	—
Fire-wood cutter	1	—	Shopwomen	5	—
Flower girl	1	—	Staymaker.....	1	—
French polishers	1	—	Straw-plait makers	2	—
Furriers.....	2	—	Tailoresses.....	6	—
Hair-worker	1	—	Tiemaker	1	—
Hatmakers	2	—	Trimming-makers	3	—
Hawkers	4	1	Umbrella-maker	1	—
Housekeeper.....	1	—	Upholsteress	1	—
Isinglass-workers	2	—	Waitresses.....	3	—
Lady's maid	1	—	Weaveresses	2	—
Laundresses	22	1			